SARDINE EGGS AND LARVAE AND OTHER FISH LARVAE, PACIFIC COAST, 1954

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SARDINE EGGS AND LARVAE AND OTHER FISH LARVAE, PACIFIC COAST, 1954

by

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ABSTRACT

Basic data on abundance of sardine eggs and larvae off the Pacific coast in 1954 are given in this report, together with records of abundance of five other species: northern anchovy (Engraulis mordax), jack mackerel (Trachurus symmetricus), hake (Merluccius productus), Pacific mackerel (Pneumatophorus diego), and rockfish (Sebastodes spp.).

SARDINE EGGS AND LARVAE AND OTHER FISH LARVAE, PACIFIC COAST, 1954

One of the major lines of research being carried out under the California Cooperative Oceanic Fisheries Investigations is a study of the abundance and survival rates of sardine eggs and larvae. The Material is collected by means of quantitative plankton hauls at an extensive grid of stations off California and Baja California. The basic data on abundance of sardine eggs and larvae in 1954 are given in this report, together with records of abundance of five other species: northern anchovy (Engraulis mordax), jack mackerel (Trachurus symmetricus), hake (Merluccius productus), Pacific mackerel (Pneumatophorus diego), and rockfish (Sebastodes spp.). This is the fifth in a continuing yearly series which places basic data on record for use by scientists studying variations in abundance of important commercial species of the Pacific coast of the United States. Previous reports in the series are listed in the Bibliography.

The data are presented in eight tables. Table I contains a tabulation of standardized haul factors for all oblique hauls made with plankton nets during cruises 5401-5412. Other pertinent data concerning the 1954 plankton hauls are given in "Zooplankton Volumes off the Pacific Coast, 1954", including location, date and time of collection, volume of water strained and the estimated depth of haul.

The data on fish eggs and larvae are given in Tables II-VIII. The numbers of eggs and larvae given in the tables are "standard haul" totals. Collections containing Pacific sardine eggs are listed in table II; the eggs are enumerated by age (in days) since spawning. The larvae of four species are enumerated by size: Pacific sardine in table III, northern anchovy in table IV, jack mackerel in table V, and Pacific mackerel in table VI. The larvae of two groups are tabulated by number only: Hake in table VII, and rockfish in table VIII.

It is with deep pleasure that the authors acknowledge the cooperation given by the Scripps Institution of Oceanography in the collection of data at sea. All personnel of the South Pacific Fishery Investigations of the U. S. Fish and Wildlife Service contributed to this project, many devoting their full time to it. Robert Counts and James Thrailkill aided in the identification, enumeration, and measurements given in this report.

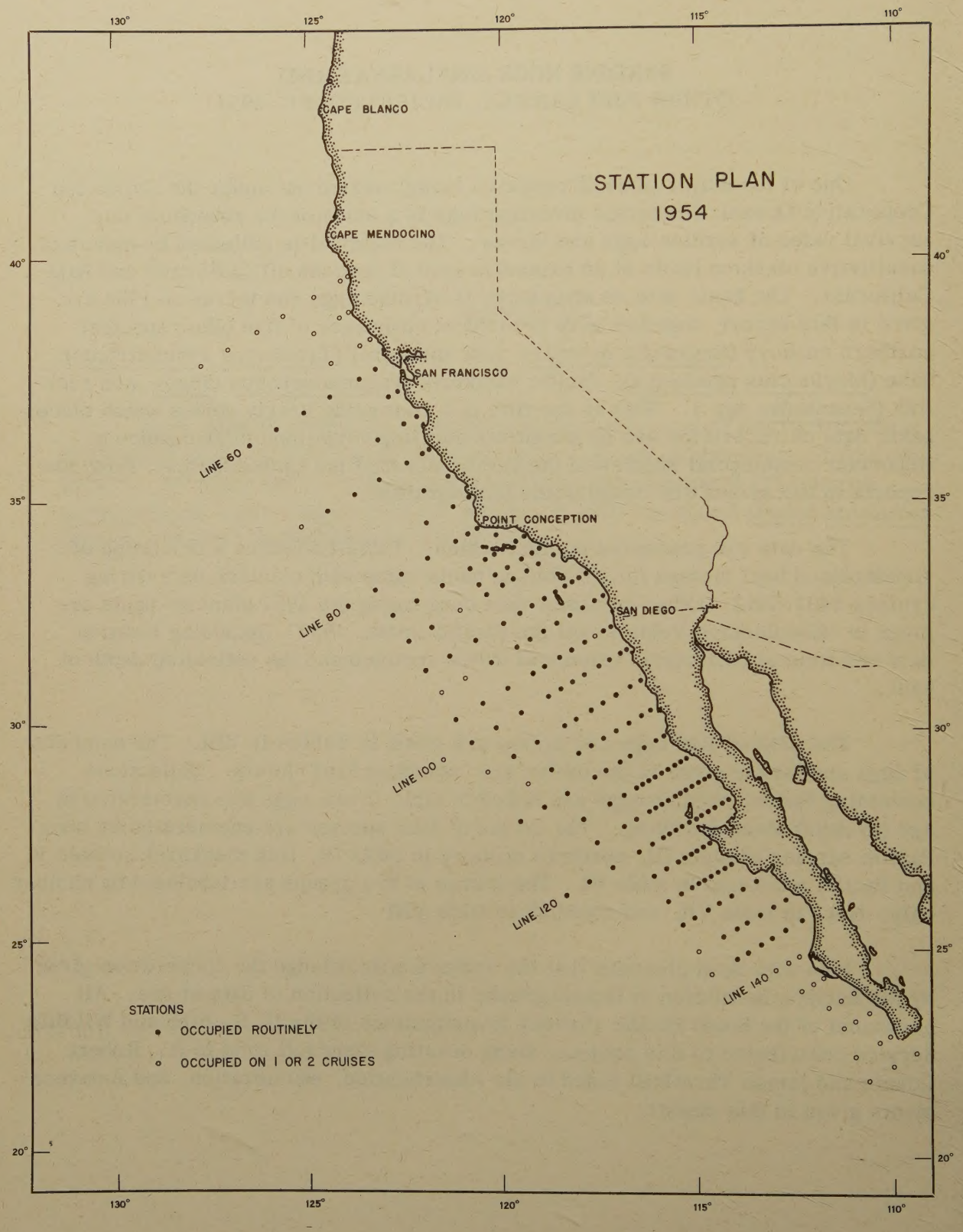

Figure 1.- Station plan, showing location of all stations occupied on routine survey cruises of the California Cooperative Oceanic Fisheries Investigations during 1954.

AREA COVERED

Coverage during 1954 is shown in figure 1. The coverage varied both in extent and intensity on different cruises, as is shown in the summary by month and area given in text table 1. The area between Point Conception and Point San Juanico (station lines 80-137) was regularly surveyed. The area off central California (station lines (50)-60-77) was covered from April through August, except for two stations on line 77, which were occupied on all cruises except December. The area off southern Baja California (station lines 140-157) was occupied during the January and December cruises.

Text table 1.- Coverage during 1954, summarized by month and area

Month	Cruise number	Central Calif. (sta. lines 50-77)	So. Calif. (80-93)	No. Baja Calif. (97-107)	Central Baja Calif. (110-137)	So. Baja Calif. (140-157)	Total all areas
January	5401	2	42	22	50	18	134
February	5402	2	37	24	53	0	116
March	5403	2	35	32	84	0	153
April	5404	18	51	39	88	0	196
May	5405	19	54	42	90	0	205
June	5406	36	48	39	86	0	209
July	5407	19	37	20	42	0	118
August	5408	22	39	19	42	0	122
October	5410	2	38	22	43	0	105
December	5412	0	36	16	45	18	115
Total		122	417	275	623	36	1473

Five vessels participated in survey cruises during 1954: the "Crest", the "Horizon", the "Paolina T.", the "Spencer F. Baird", and the "E. W. Scripps", all operated by the Scripps Institution of Oceanography of the University of California. Regular survey cruises were made at monthly intervals, except in September and November. The vessels participating in each cruise during 1954 are given in text table 2.

The methods employed in taking plankton hauls during 1954 were identical with those described in previous reports in this series. Refer particularly to Ahlstrom 1953, pp. 4-6.

Text table 2.- Research vessels participating in the collection of plankton material, 1954

Month	Cruise number	Number vessels used	S.F. BAIRD	CREST	HORIZON	PAOLINA T.	E.W. SCRIPPS
January	5401	2		X	X		
February	5402	2		X	X		
March	5403	2		X	X		
April	5404	3		X	X		X
May	5405	2		X	X		
June	5406	2		X	X		
July	5407	2		X	X		
August	5408	2	X	X			
October	5410	2		X	X		
December	5412	2		X		X	

GUIDE TO TABLES

Table I. Standardized Haul Factors. The standardized haul factor adjusts hauls to the comparable standard of 10 cubic meters of water strained per meter of depth fished (see Ahlstrom 1953: 4-6).

The following abbreviations or symbols appear in table I:

NT - No net tow taken
NQ - Haul not quantitative
- ...A dash indicates that the station was not occupied during the cruise under which it appears.
S.Factors given in parentheses were not based on current meter readings.

Table II. Record of Sardine Eggs, 1954.
Number of normal eggs: Number of normally developing sardine eggs.
Total number of eggs: Includes all sardine eggs taken in a sample, whether normal or abnormal. Sardine eggs are classified as abnormal when the embryos are stunted and misshapen in appearance. It is not known whether the abnormalities are caused by a diseased condition of the eggs or by mechanical injury during collection.

The letters A through D are used to designate age categories of eggs.
A...Eggs spawned within 24 hours of collection.
B...Eggs spawned within 24.1 to 48 hours of collection.
C...Eggs spawned within 48.1 to 72 hours of collection.
D...Eggs spawned within 72.1 to 96 hours of collection.
Uncl...Unclassified eggs. Deteriorating eggs that could not be classified with certainty.
n...Total number of eggs in sample.

Table III. Record of Sardine Larvae, 1954.
Midpoint of size classes: The larvae are grouped into size classes which have the following midpoints and ranges:

Midpoint (in mm.)	Range (in mm.)	Midpoint (in mm.)	Range (in mm.)
3.00	2.00-4.25	12.75	12.26-13.25
4.75	4.26-5.25	13.75	13.26-14.25
5.75	5.26-6.25	14.75	14.26-15.25
6.75	6.26-7.25	15.75	15.26-16.25
7.75	7.26-8.25	17.25	16.26-18.25
8.75	8.26-9.25	19.25	18.26-20.25
9.75	9.26-10.25	21.25	20.26-22.25
10.75	10.26-11.25	23.25	22.26-24.25
11.75	11.26-12.25		

Dis... Disintegrating larvae that cannot be measured accurately. (Tables III-VI)

Table IV. Record of Anchovy Larvae, 1954
Same as above, except for the first two categories:

Midpoint (in mm.)	Range (in mm.)
2.50	1.76-3.25
3.75	3.26-4.25

Table V. Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954.
Midpoint of size classes: The larvae are grouped into size classes which have the following midpoints and ranges:

Midpoint (in mm.)	Range (in mm.)	Midpoint (in mm.)	Range (in mm.)
2.00	1.76-2.25	7.75	7.26-8.25
2.50	2.26-2.75	8.75	8.26-9.25
3.00	2.76-3.25	9.75	9.26-10.25
3.50	3.26-3.75	10.75	10.26-11.25
4.00	3.76-4.25	11.75	11.26-12.25
4.50	4.26-4.75	12.75	12.26-13.25
5.00	4.76-5.25	13.75	13.26-14.25
5.75	5.26-6.25	14.75	14.26-15.25
6.75	6.26-7.25	15.26 & over	

Table VI. Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1954.
The comments under Table V are applicable here, as well.

Table VII. Record of the Larvae of Hake (Merluccius productus), 1954. The standardized number of larvae are listed by station for all cruises on which they were taken during 1954. A dash indicates that the station was not occupied.

Table VIII. Record of the Larvae of Rockfish (Sebastodes spp.), 1954.
The comments under Table VII are applicable here, as well.

Table I

Record of Standardized Haul Factors for Oblique Hauls made with Plankton Nets during Cruises 5401-5412, 1954

Station	Cruise and Month									
	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
50.47	-	-	-	-	-	1.57	-	-	-	-
50.50	-	-	-	-	-	2.43	-	-	-	-
50.60	-	-	-	-	-	2.90	-	-	-	-
50.70	-	-	-	-	-	2.83	-	-	-	-
50.80	-	-	-	-	-	3.41	-	-	-	-
50.90	-	-	-	-	-	3.08	-	-	-	-
50.100	-	-	-	-	-	2.46	-	-	-	-
53.52	-	-	-	-	-	3.14	-	-	-	-
53.55	-	-	-	-	-	3.10	-	-	-	-
53.65	-	-	-	-	-	2.55	-	-	-	-
57.51	-	-	-	-	-	1.89	-	-	-	-
57.55	-	-	-	-	-	2.79	-	-	-	-
57.65	-	-	-	-	-	2.99	-	-	-	-
60.55	-	-	-	2.77	2.52	2.99	2.48	3.57	-	-
60.60	-	-	-	2.20	2.83	2.37	2.86	2.74	-	-
60.70	-	-	-	1.81	2.80	3.43	2.58	3.07	-	-
60.80	-	-	-	(2.47)	2.18	2.57	2.96	2.77	-	-
60.90	-	-	-	(2.26)	3.33	2.96	2.65	2.61	-	-
60.100	-	-	-	-	-	3.08	2.33	2.10	-	-
63.52	-	-	-	1.92	2.23	1.91	2.11	3.47	-	-
63.55	-	-	-	2.66	2.30	2.30	2.67	3.27	-	-
63.65	-	-	-	-	-	3.64	-	-	-	-
67.50	-	-	-	1.10	2.08	2.34	2.49	2.55	-	-
67.55	-	-	-	2.38	2.91	3.01	(2.43)	2.48	-	-
67.65	-	-	-	-	-	3.14	2.28	2.55	-	-
70.51	-	-	-	-	2.53	2.80	3.00	2.29	-	-
70.55	-	-	-	1.90	2.41	2.83	2.87	2.56	-	-
70.60	-	-	-	2.82	3.38	2.42	2.59	2.99	-	-
70.70	-	-	-	1.83	2.14	3.11	2.21	1.64	-	-
70.80	-	-	-	N.T.	2.74	3.16	2.65	2.57	-	-
70.90	-	-	-	2.29	2.73	3.36	-	-	-	-
70.100	-	-	-	-	-	2.43	-	-	-	-
73.50	-	-	-	2.82	2.21	3.23	N.Q.	2.94	-	-
73.55	-	-	-	-	-	-	-	3.48	-	-
73.60	-	-	-	1.83	2.87	2.96	N.Q.	3.83	-	-
77.50	2.23	3.15	2.86	2.22	N.Q.	2.17	3.08	3.11	2.84	-
77.55	2.45	2.76	2.86	2.77	2.80	2.39	2.93	3.00	1.95	-
77.65	-	-	-	2.62	2.90	N.Q.	2.63	2.70	-	-
80.51	1.46	2.48	2.35	1.92	2.48	2.22	2.05	2.68	2.50	2.68
80.55	2.05	2.83	2.77	2.24	2.27	2.80	2.38	2.81	3.11	3.44
80.60	2.91	3.33	2.86	2.44	2.48	2.84	2.28	2.97	3.30	3.15
80.70	3.55	3.43	2.68	2.92	2.11	N.Q.	2.49	2.52	3.71	2.59
80.80	2.19	2.96	2.60	2.45	2.60	3.03	2.56	2.76	3.14	2.80

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls
made with Plankton Nets during Cruises 5401-5412, 1954

Station	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
	Cruise and Month									
80.90	2.69	-	2.14	2.49	2.46	3.00	2.60	2.79	3.10	3.15
80.100	2.15	-	-	-	-	2.75	-	2.98	-	-
80.110	2.75	-	-	-	-	-	-	-	-	-
82.47	2.34	2.97	2.33	2.92	2.57	2.35	2.33	2.74	3.09	3.23
83.40	0.56	1.71	1.51	0.72	1.52	2.06	(2.11)	1.87	2.30	1.53
83.43	2.75	2.84	2.47	2.13	2.19	2.83	2.90	2.70	(2.56)	2.71
83.48	2.50	2.74	2.69	2.14	2.78	2.04	2.42	2.64	2.67	3.56
83.51	2.63	2.83	3.28	2.49	1.69	1.53	1.89	2.29	3.43	3.17
83.55	2.42	2.48	2.50	2.54	2.85	3.42	2.30	3.34	3.40	2.97
83.60	2.37	3.82	2.76	2.91	2.12	3.42	3.07	3.17	2.94	2.89
83.70	-	-	-	2.08	2.78	2.64	-	-	-	-
83.80	-	-	-	2.87	2.52	2.58	-	-	-	-
83.90	-	-	-	2.26	2.81	2.59	-	-	-	-
85.39	N.S.	3.00	2.38	2.07	(1.62)	2.50	N.Q.	2.73	2.91	2.83
85.40	2.08	2.65	2.56	2.07	2.48	-	2.55	1.64	3.01	2.91
85.45	2.72	2.48	2.34	3.25	2.94	1.96	2.51	2.41	2.95	3.06
85.50	2.74	2.96	3.32	2.09	2.21	3.73	2.83	2.37	3.66	3.15
85.55	2.67	3.40	3.22	2.55	2.19	3.38	2.57	2.65	3.84	2.96
85.60	2.16	3.34	3.17	2.61	2.88	3.09	3.57	3.19	3.08	2.84
87.35	1.43	2.73	2.25	2.56	2.14	3.07	(2.26)	2.88	2.46	2.83
87.40	1.53	2.89	2.60	2.83	3.54	3.06	(2.17)	3.10	N.Q.	3.14
87.45	2.16	2.63	3.39	2.78	3.19	2.41	4.03	2.51	2.87	3.09
87.50	1.59	2.87	2.87	2.03	1.94	2.23	2.46	2.37	2.86	2.58
87.55	2.23	2.99	2.88	3.10	2.17	2.64	3.60	2.60	2.70	3.17
87.60	2.29	2.68	3.38	2.88	3.70	2.40	3.19	2.47	2.99	3.43
87.70	-	-	-	2.44	2.97	-	-	-	-	-
87.80	-	-	-	2.60	2.83	2.36	-	-	-	-
87.90	-	-	-	2.40	2.82	2.32	-	-	-	-
90.28	1.95	2.50	2.56	2.32	2.16	3.16	2.56	1.33	2.63	2.58
90.30	2.10	2.73	2.80	2.05	2.67	2.54	3.13	2.23	3.13	2.94
90.33	-	-	-	-	2.32	2.05	-	-	-	-
90.37	1.66	2.48	2.87	2.97	2.89	1.99	4.17	2.79	2.86	3.28
90.41	-	-	-	-	3.23	2.35	-	-	-	-
90.45	2.01	3.03	2.66	1.54	2.60	2.38	(3.19)	2.69	2.90	3.51
90.50	-	-	-	-	2.41	2.46	-	-	2.75	3.35
90.55	2.90	3.16	2.96	2.77	2.59	3.34	3.46	2.99	2.75	-
90.60	1.62	2.53	2.29	2.34	3.03	3.42	3.26	2.71	3.19	2.87
90.70	2.29	3.28	2.34	2.76	3.14	3.13	2.93	2.51	3.10	3.17
90.80	2.68	2.76	-	2.89	3.49	3.36	-	-	-	-
90.90	1.79	-	-	2.85	2.72	-	-	-	-	-
90.100	1.74	-	-	-	-	-	-	-	-	-
90.110	2.76	-	-	-	-	-	-	-	-	-

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls made with Plankton Nets during Cruises 5401-5412, 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
93.27	1.33	2.05	2.48	2.45	3.40	3.17	(2.79)	1.88	2.91	3.06
93.30	2.34	2.83	3.09	2.50	2.45	2.53	2.38	2.55	2.96	2.88
93.35	-	-	-	2.90	2.62	2.97	3.33	2.68	-	-
93.40	2.58	2.65	2.61	2.85	2.46	N.Q.	4.52	3.04	2.97	3.19
93.45	-	-	-	2.86	2.76	2.49	3.65	2.19	2.64	-
93.50	2.68	2.58	-	3.09	2.56	3.05	4.27	2.95	3.28	3.26
93.55	-	-	-	3.96	2.63	3.24	-	-	3.22	-
93.60	1.89	2.54	-	3.34	2.56	3.32	-	-	-	-
93.70	-	-	1.96	3.56	2.02	2.63	-	-	-	-
93.80	-	-	-	2.98	2.30	-	-	-	-	-
93.90	-	-	-	3.20	2.25	N.Q.	-	-	-	-
97.30	1.25	2.31	2.50	1.89	2.59	2.70	3.54	3.16	3.18	2.34
97.32	2.60	2.51	1.54	N.S.	2.40	2.57	2.82	2.73	3.71	3.17
97.36	-	-	-	-	2.52	3.30	-	-	-	-
97.40	2.79	2.81	2.50	2.92	2.81	2.84	2.64	2.85	3.42	3.12
97.45	-	-	-	2.89	2.63	2.73	2.47	3.06	2.86	-
97.50	1.90	2.81	2.90	3.26	2.70	2.89	3.53	2.48	4.15	3.53
97.55	-	-	-	2.96	2.57	2.72	-	-	3.75	-
97.60	2.43	2.85	2.33	2.97	2.03	2.58	-	-	-	-
97.70	-	-	3.44	2.88	3.24	2.69	-	-	-	-
97.80	-	-	-	3.10	2.89	2.72	-	-	-	-
97.90	-	-	-	2.82	2.77	2.58	-	-	-	-
100.29	2.68	3.30	0.49	2.16	2.90	2.74	2.43	2.82	2.66	2.96
100.30	2.35	2.64	2.07	2.66	2.92	2.67	2.37	2.89	3.14	2.97
100.35	-	-	2.76	2.88	2.59	2.88	2.76	3.19	-	-
100.40	2.37	2.62	2.42	2.83	3.03	3.08	2.76	2.94	3.04	3.41
100.45	-	-	2.64	2.77	3.44	3.02	3.38	2.97	3.23	-
100.50	1.50	2.96	2.43	3.02	3.18	2.83	2.93	2.69	3.32	N.Q.
100.55	-	-	1.92	2.87	3.74	2.77	-	-	3.40	-
100.60	2.39	3.13	2.52	3.00	2.65	2.48	2.92	2.91	2.99	3.35
100.70	2.77	3.16	2.25	2.90	3.47	2.93	3.14	2.98	2.89	3.70
100.80	1.78	2.61	2.56	3.20	3.26	3.03	2.87	-	3.04	N.Q.
100.90	2.51	-	2.32	2.91	3.37	2.34	-	-	2.95	3.71
100.100	-	-	-	2.97	3.37	-	-	-	-	-
103.30	2.94	2.25	2.28	2.36	1.25	2.70	3.33	2.17	1.39	2.87
103.35	2.37	3.64	2.33	3.17	2.48	2.92	2.80	3.02	2.31	3.09
103.40	2.41	3.54	2.58	3.27	3.00	2.89	3.36	2.97	2.88	3.08
103.45	-	3.05	2.95	2.93	2.57	2.95	-	-	-	-
103.50	2.61	3.11	2.43	3.04	2.36	3.14	-	-	-	-
103.55	-	-	2.81	3.88	2.91	3.02	-	-	-	-
103.60	1.93	3.29	2.57	2.94	2.75	2.66	-	-	-	-
103.70	-	-	-	3.00	2.68	2.91	-	-	-	-
103.80	-	-	-	3.23	3.43	2.79	-	-	-	-
103.90	-	-	-	N.Q.	3.17	-	-	-	-	-

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls
made with Plankton Nets during Cruises 5401-5412, 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
107.32	2.61	2.79	1.79	3.14	2.95	2.90	3.46	3.07	3.21	2.98
107.35	2.89	2.56	1.67	3.66	2.75	3.26	3.15	2.74	2.97	3.39
107.40	1.76	3.48	2.85	3.66	2.60	3.07	3.30	3.57	2.83	3.39
107.45	-	2.96	2.40	3.25	2.93	3.07	-	-	-	-
107.50	N.S.	3.19	2.43	3.64	3.32	2.87	-	-	-	-
107.55	-	-	1.66	3.44	2.86	3.06	-	-	-	-
107.60	2.03	3.12	2.36	3.51	3.35	2.40	-	-	-	-
107.70	-	-	-	3.40	3.49	3.21	-	-	-	-
107.80	-	-	-	2.94	4.05	-	-	-	-	-
110.33	1.97	3.40	2.25	1.99	3.22	2.30	3.68	2.65	1.82	2.87
110.35	1.94	2.24	2.71	3.19	3.08	2.72	2.92	3.13	2.60	2.78
110.40	2.52	2.72	2.00	3.14	2.99	2.98	2.72	3.17	3.52	3.18
110.45	-	3.09	3.01	2.88	3.49	3.04	3.37	3.23	2.74	-
110.50	2.48	3.37	3.22	2.96	2.86	3.03	3.49	3.10	2.85	3.12
110.55	-	-	3.16	3.04	3.37	2.55	-	-	2.70	-
110.60	2.13	3.14	1.22	3.38	3.50	2.74	3.14	2.95	3.33	3.35
110.70	1.87	-	2.73	2.41	3.04	3.03	-	-	-	-
110.80	2.69	-	2.34	3.19	3.54	2.83	-	-	-	-
110.90	2.09	-	-	2.84	2.79	-	-	-	-	-
110.100	2.34	-	-	-	-	-	-	-	-	-
113.30	2.74	2.79	2.44	3.97	1.33	2.27	1.90	2.39	2.60	2.36
113.32	-	-	2.68	2.74	2.39	2.74	-	-	-	-
113.35	2.97	2.62	1.42	2.77	2.04	2.83	3.53	2.40	2.63	2.36
113.37	-	-	2.54	3.34	2.72	3.10	-	-	-	-
113.40	2.46	2.90	3.17	3.48	3.16	2.58	3.02	2.92	3.33	2.30
113.42	-	-	2.84	3.56	2.79	2.81	-	-	-	-
113.45	-	3.62	2.84	3.06	2.94	2.56	-	-	-	-
113.47	-	-	2.80	2.92	3.20	2.57	-	-	-	-
113.50	(3.27)	3.35	1.95	2.29	2.83	2.68	-	-	-	3.44
113.55	-	-	3.40	3.17	2.81	3.08	-	-	-	-
113.60	-	2.87	3.46	3.46	2.96	2.84	-	-	-	2.95
113.70	-	-	-	3.56	3.01	2.82	-	-	-	-
117.26	2.45	N.S.	1.21	2.86	2.62	2.71	2.40	2.32	2.62	2.41
117.28	-	-	1.33	2.70	2.31	3.03	-	-	-	-
117.30	2.91	2.84	2.10	2.59	2.35	2.45	2.98	2.93	1.84	2.76
117.32	-	-	3.11	3.17	2.78	2.91	-	-	-	-
117.35	2.63	2.78	2.32	3.28	2.72	2.79	3.62	2.61	1.48	2.37
117.37	-	-	2.06	2.78	3.15	2.73	-	-	-	-
117.40	2.95	2.81	1.66	3.71	2.10	2.64	3.04	2.89	2.19	3.21
117.42	-	-	2.36	2.80	3.83	2.89	-	-	-	-
117.45	-	2.77	2.10	2.72	2.80	2.98	-	-	-	-
117.47	-	-	2.80	2.86	2.39	2.99	-	-	-	-
117.50	3.04	3.21	2.34	2.81	2.49	3.05	-	-	-	2.30

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls
made with Plankton Nets during Cruises 5401-5412, 1954

Cruise and Month

Station	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
117.55	-	2.81	2.74	3.10	2.10	3.18	-	-	-	-
117.60	-	3.00	2.20	3.55	2.43	2.74	-	-	-	3.06
117.70	-	-	-	3.03	2.10	3.41	-	-	-	-
120.25	(2.34)	2.06	1.10	2.62	2.06	2.33	3.41	2.29	1.21	1.86
120.27	-	-	N.Q.	3.31	2.87	2.38	-	-	-	-
120.30	2.65	2.32	1.97	5.42	2.23	2.98	3.76	2.47	2.57	1.95
120.32	-	-	1.53	2.72	2.59	2.67	-	-	-	-
120.35	2.64	2.03	1.40	2.88	2.42	2.83	3.14	2.61	1.03	3.04
120.37	-	2.00	2.01	3.13	1.96	2.63	-	-	-	-
120.40	-	2.42	2.45	2.37	1.90	2.16	-	-	-	3.02
120.42	-	3.12	2.00	3.74	3.28	2.47	-	-	-	-
120.45	2.68	2.93	2.60	3.89	2.96	2.66	3.83	3.66	2.88	2.42
120.47	-	-	2.84	3.24	3.25	2.66	-	-	-	-
120.50	(2.65)	3.09	2.71	3.75	1.96	2.87	3.46	2.84	1.97	2.93
120.55	-	3.03	2.53	3.00	2.96	2.69	-	-	N.Q.	-
120.60	2.94	2.37	2.26	3.31	2.74	2.44	3.21	3.19	3.67	2.32
120.70	3.02	2.74	2.43	2.97	3.18	3.20	3.02	2.98	2.67	2.95
120.80	2.55	3.06	2.87	-	3.54	3.05	3.20	2.85	3.32	3.00
120.90	-	-	1.74	-	3.51	3.24	2.98	2.88	2.93	2.78
120.120	3.21	-	-	-	-	-	-	-	-	-
123.37	2.35	2.29	2.47	3.02	3.49	2.12	2.56	2.73	2.35	2.75
123.40	3.12	2.40	2.85	3.68	3.41	2.15	2.84	3.33	3.25	2.38
123.42	-	3.08	2.74	3.15	3.18	2.61	-	-	-	-
123.45	-	3.03	2.56	3.45	2.64	3.13	2.86	3.03	2.86	2.99
123.47	-	-	2.80	3.86	3.28	2.91	-	-	-	-
123.50	2.71	2.17	3.00	3.59	3.15	2.68	3.20	3.34	3.24	3.51
123.55	-	-	2.24	3.58	3.24	3.05	-	-	3.03	3.56
123.60	3.61	-	2.31	2.81	2.87	2.88	-	-	-	-
127.34	2.98	1.97	2.99	2.81	2.96	3.02	2.21	2.88	N.Q.	2.33
127.37	-	-	2.84	4.02	2.86	4.81	-	-	-	-
127.40	3.04	3.49	2.66	3.72	2.93	N.Q.	2.90	2.83	3.38	2.95
127.42	-	-	2.68	4.21	3.02	3.23	-	-	-	-
127.45	-	3.06	2.88	3.41	3.13	2.94	3.32	2.95	2.93	2.75
127.47	-	-	2.96	3.25	2.88	2.87	-	-	-	-
127.50	3.37	2.42	3.09	2.82	3.18	2.31	2.90	2.78	1.58	2.77
127.55	-	-	2.93	4.75	2.79	2.94	-	-	3.14	2.71
127.60	3.10	-	2.67	3.38	3.30	2.65	-	-	-	-
130.30	3.01	2.79	1.87	3.19	1.76	2.24	3.78	(2.99)	1.33	2.47
130.35	2.77	3.15	2.54	3.77	3.27	3.20	2.07	2.70	1.60	2.90
130.40	3.40	3.04	2.84	2.81	2.66	2.80	2.85	4.66	2.60	3.04
130.45	-	2.17	2.49	3.16	3.10	3.09	2.68	3.42	3.01	-
130.50	2.65	2.92	2.53	3.06	2.99	2.86	3.08	3.61	3.08	3.04

Table I (cont'd)
Record of Standardized Haul Factors for Oblique Hauls
made with Plankton Nets during Cruises 5401-5412, 1954

Cruise and Month

Station	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
130.55	-	2.89	2.01	3.50	2.97	2.73	-	-	3.37	-
130.60	3.52	1.88	2.27	3.72	3.42	2.73	3.25	3.13	1.89	2.45
130.110	3.08	-	-	-	-	-	-	-	-	-
133.25	2.52	2.24	3.24	2.80	2.33	2.45	2.80	2.61	1.80	2.34
133.30	3.38	1.17	2.27	2.68	3.02	(2.72)	2.87	3.20	1.86	2.76
133.35	-	2.47	2.75	3.01	3.09	3.19	3.43	3.30	-	-
133.40	2.51	2.41	2.71	3.01	3.03	2.72	2.87	4.32	-	-
133.45	-	-	2.96	2.78	3.25	2.86	-	-	-	-
133.50	3.28	-	2.53	2.92	2.34	2.66	-	-	-	-
133.60	-	-	-	3.37	3.26	-	-	-	-	-
137.23	2.84	1.96	2.23	3.02	2.41	1.85	2.54	1.39	0.98	1.83
137.30	2.97	2.74	2.77	3.48	3.25	2.47	2.90	2.74	2.93	3.19
137.35	-	-	2.74	3.54	3.15	3.29	-	-	-	-
137.40	3.09	-	2.72	3.49	2.74	3.13	-	-	-	-
137.45	-	-	2.56	2.91	3.19	2.93	-	-	-	-
137.50	2.77	-	2.79	2.90	3.30	2.62	-	-	-	-
137.60	-	-	-	2.54	2.43	-	-	-	-	-
137.140	3.04	-	-	-	-	-	-	-	-	-
140.30	2.91	-	-	-	-	-	-	-	-	2.13
140.35	2.61	-	-	-	-	-	-	-	-	2.70
140.40	2.77	-	-	-	-	-	-	-	-	2.85
140.50	3.06	-	-	-	-	-	-	-	-	-
140.110	3.16	-	-	-	-	-	-	-	-	-
143.26	2.71	-	-	-	-	-	-	-	-	1.91
143.30	3.20	-	-	-	-	-	-	-	-	2.87
143.35	2.92	-	-	-	-	-	-	-	-	2.64
147.20	2.80	-	-	-	-	-	-	-	-	2.07
147.25	3.08	-	-	-	-	-	-	-	-	2.94
147.30	3.12	-	-	-	-	-	-	-	-	2.65
147.90	3.18	-	-	-	-	-	-	-	-	-
150.19	2.84	-	-	-	-	-	-	-	-	2.33
150.25	3.36	-	-	-	-	-	-	-	-	2.36
150.30	3.11	-	-	-	-	-	-	-	-	2.57
150.40	2.78	-	-	-	-	-	-	-	-	-
150.50	2.69	-	-	-	-	-	-	-	-	-
150.60	2.93	-	-	-	-	-	-	-	-	-
153.16	-	-	-	-	-	-	-	-	-	2.90
153.20	-	-	-	-	-	-	-	-	-	2.80
153.30	-	-	-	-	-	-	-	-	-	2.82
157.10	-	-	-	-	-	-	-	-	-	2.09
157.20	-	-	-	-	-	-	-	-	-	2.83
157.30	-	-	-	-	-	-	-	-	-	2.72

Table II
Record of Sardine Eggs, 1954

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n
Cruise 5401:										
100.29	0	3	0	0	0	3	0	0	0	3
103.30	0	0	3	9	0	0	6	18	0	24
110.50	0	0	2	-	0	0	2	-	0	2
117.40	3	3	0	-	3	3	0	-	0	6
120.30	0	0	3	-	3	0	3	-	3	9
120.35	0	576	876	-	0	597	887	-	0	1,484
120.45	0	0	3	-	0	0	3	-	0	3
120.50	0	0	5	-	0	0	5	-	0	5
120.60	0	3	50	-	0	3	56	-	0	59
120.70	9	254	88	-	30	266	91	-	0	387
120.80	0	133	18	-	0	178	28	-	26	232
120.120	0	0	-	-	3	0	-	-	0	3
123.37	489	696	-	-	634	947	-	-	45	1,626
127.34	12	3	-	-	68	3	-	-	15	86
137.30	0	3	-	-	0	3	-	-	0	3
143.26	3,252	260	-	-	4,358	336	-	-	260	4,954
Total	3,765	1,934	1,048	9	5,099	2,339	1,081	18	349	8,886
Cruise 5402:										
83.40	0	0	0	-	24	0	0	-	2	26
85.40	0	0	3	-	0	0	5	-	0	5
103.30	0	2	0	-	0	2	4	-	0	6
107.32	0	11	0	-	0	11	6	-	0	17
110.33	0	3	17	-	0	7	27	-	0	34
110.60	0	0	6	-	0	0	6	-	0	6
113.35	702	52	63	-	964	52	94	-	52	1,162
113.40	0	0	0	-	6	0	0	-	0	6
113.45	7	0	0	-	7	0	0	-	0	7
113.50	0	147	345	-	17	154	425	-	7	603
113.60	0	95	12	-	12	120	20	-	20	172
117.30	0	0	0	-	0	0	0	-	3	3
117.35	28	0	0	-	50	0	0	-	11	61
117.50	0	3	0	-	0	3	0	-	0	3
117.55	53	11	-	-	56	17	-	-	8	81
117.60	0	3	-	-	0	3	-	-	0	3
120.25	0	0	109	0	0	0	111	23	115	249
120.30	0	7	2	-	0	7	2	-	281	290
120.35	0	0	0	-	0	0	0	-	39	39
120.37	1,592	368	152	-	1,856	376	168	-	92	2,492
120.40	138	0	14	-	232	0	44	-	58	334
120.42	0	0	0	-	0	0	0	-	6	6
120.60	0	0	-	-	0	0	-	-	2	2

Table II (cont'd)
Record of Sardine Eggs, 1954

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n
Cruise 5402 (cont'd)										
120.80	73	12	12	-	95	24	31	-	9	159
123.37	0	13,621	0	-	0	19,996	2,830	-	2,043	24,869
127.34	0	1,076	16	-	0	2,057	1,072	-	906	4,035
130.55	0	3	-	-	0	3	-	-	0	3
133.30	0	0	-	-	0	0	-	-	14	14
Total	2,593	15,414	751	0	3,319	22,832	4,845	23	3,668	34,687
Cruise 5403:										
85.39	0	0	0	0	0	0	0	2	0	2
97.50	0	0	0	-	0	0	3	-	3	6
97.60	5	0	359	9	5	0	615	14	5	639
97.70	0	21	0	0	0	35	0	0	7	42
100.40	56	82	0	-	196	123	2	-	17	338
100.45	5	0	0	-	47	0	0	-	16	63
100.50	10	0	5	-	15	10	5	-	0	30
100.55	0	0	138	-	0	8	169	-	4	181
100.60	0	5	0	40	0	5	10	75	5	95
100.70	4	18	0	-	4	22	2	-	0	28
100.80	0	8	10	-	0	8	10	-	0	18
103.35	0	2	40	-	0	4	77	-	5	86
103.40	5	70	-	-	49	140	-	-	0	189
103.45	3	18	0	-	12	33	0	-	6	51
103.50	22	411	73	-	58	727	105	-	5	895
103.60	3	8	0	-	11	13	8	-	10	42
107.32	7	0	0	-	48	2	0	-	7	57
107.35	5	0	0	-	7	0	0	-	0	7
107.55	0	0	3	-	0	5	10	-	0	15
107.60	7	0	35	-	7	7	77	-	2	93
110.35	0	11	14	3	0	133	28	3	5	169
110.40	0	2	0	-	0	2	2	-	0	4
110.50	0	0	3	-	0	0	22	-	0	22
110.55	0	3	25	-	0	13	63	-	3	79
110.60	0	0	0	-	0	1	1	-	0	2
110.70	0	6	6	-	0	9	6	-	0	15
110.80	0	2	0	-	2	2	0	-	7	11
113.30	0	0	0	0	0	0	5	0	0	5
113.32	0	0	5	0	0	0	10	0	0	10
113.40	0	3	0	-	6	3	0	-	0	9
113.42	0	6	0	-	3	6	3	-	0	12
113.47	0	0	0	-	6	8	0	-	0	14
113.50	0	154	41	-	2	337	90	-	8	437

Table II (cont'd)
Record of Sardine Eggs, 1954

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n
Cruise 5403 (cont'd):										
113.55	14	41	0	-	48	218	0	-	95	361
113.60	0	194	31	-	0	883	45	-	55	983
117.26	0	1	0	0	300	20	2	2	80	404
117.40	0	0	2	-	0	0	9	-	0	9
117.55	0	3	3	-	0	3	3	-	0	6
117.60	9	99	-	-	11	416	-	-	66	493
120.37	0	0	2	-	0	0	20	-	0	20
120.40	211	196	145	-	593	260	875	-	56	1,784
120.42	0	968	16	-	128	2,504	216	-	648	3,496
120.45	0	0	182	-	0	5	770	-	0	775
120.47	0	0	0	-	0	0	8	-	0	8
120.50	0	0	5	-	0	0	10	-	0	10
123.37	0	175	469	-	7	1,373	1,049	-	79	2,508
123.40	0	6	3	-	0	20	6	-	14	40
127.34	0	36	727	-	0	54	1,370	-	24	1,448
127.37	0	0	3	-	0	0	26	-	0	26
Total	366	2,549	2,345	52	1,565	7,412	5,732	96	1,232	16,037
Cruise 5404:										
85.39	0	0	0	2	0	2	0	2	0	4
87.80	0	0	0	0	0	10	0	0	0	10
87.90	2	22	0	-	9	34	0	-	0	43
90.70	0	0	0	0	0	0	0	0	3	3
90.80	0	0	3	-	3	0	3	-	0	6
90.90	3	68	23	-	54	159	37	-	26	276
93.40	0	0	0	0	3	0	0	0	0	3
93.45	6	3	0	-	34	37	0	-	23	94
93.50	49	18	6	-	250	65	12	-	90	417
93.60	0	33	0	0	0	103	0	0	0	103
93.70	28	43	0	-	42	50	0	-	0	92
93.80	0	3	3	-	0	3	3	-	0	6
93.90	6	3	10	-	28	22	10	-	0	60
97.40	6	0	0	-	14	0	0	-	0	14
97.45	0	0	6	-	0	0	14	-	3	17
97.50	0	104	78	20	0	453	199	91	176	919
97.55	56	36	216	-	139	86	660	-	68	953
97.60	9	3	12	-	24	3	24	-	6	57
97.70	35	0	0	-	93	0	0	-	40	133
97.80	0	3	50	6	0	3	66	9	6	84
100.40	0	0	0	0	0	3	0	0	0	3
100.45	19	6	3	-	66	6	6	-	11	89

Table II (cont'd)
Record of Sardine Eggs, 1954

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n
Cruise 5404 (cont'd):										
100.50	3	6	12	-	3	9	21	-	9	42
100.55	14	37	9	-	34	69	23	-	3	129
100.60	3	0	0	-	24	0	3	-	3	30
100.70	0	0	0	-	0	3	6	-	0	9
103.30	0	0	0	2	0	0	0	4	0	4
103.35	0	35	0	-	0	114	13	-	6	133
103.40	392	1,867	320	-	1,311	3,136	568	-	144	5,159
103.45	0	0	3	0	0	6	12	6	6	30
103.50	0	12	27	-	0	15	51	-	0	66
103.55	4	4	0	-	4	4	0	-	0	8
103.60	0	0	3	-	0	0	3	-	0	3
103.80	0	0	0	-	0	3	0	-	0	3
107.35	4	22	7	-	22	44	25	-	4	95
107.40	0	0	18	-	0	4	33	-	4	41
107.45	0	0	0	-	3	0	0	-	0	3
107.50	146	44	4	-	233	77	8	-	15	333
107.55	0	3	165	-	0	3	395	-	3	401
107.60	4	49	0	-	4	49	0	-	0	53
107.80	0	3	-	-	0	3	-	-	0	3
110.33	22	179	0	-	22	384	8	-	20	434
110.35	491	51	16	-	1,155	77	29	-	51	1,312
110.40	34	13	9	-	56	19	9	-	3	87
110.45	0	0	0	-	6	0	3	-	0	9
110.80	3	3	6	-	6	9	6	-	3	24
113.32	0	3	0	-	0	3	0	-	0	3
113.35	335	773	543	-	1,061	1,153	1,144	-	33	3,391
113.37	117	64	20	-	411	128	277	-	40	856
113.40	7	38	129	-	11	52	244	-	7	314
113.42	110	36	28	-	217	50	35	-	18	320
113.45	80	83	67	-	111	123	107	-	0	341
113.47	82	88	0	-	129	111	0	-	9	249
113.50	0	0	2	-	2	0	2	-	0	4
113.55	0	3	6	-	0	3	22	-	0	25
117.28	0	0	0	11	0	0	0	19	0	19
117.30	0	0	8	-	0	0	36	-	0	36
117.32	0	0	19	-	0	0	32	-	0	32
117.35	0	0	3	-	0	0	3	-	0	3
117.37	261	83	14	-	347	108	17	-	0	472
117.40	37	4	19	-	63	8	23	-	4	98
117.42	0	0	0	-	3	0	0	-	0	3
120.40	0	0	0	-	2	0	0	-	0	2
120.47	0	0	3	-	0	0	6	-	0	6
120.50	0	0	8	-	0	8	76	-	0	84
120.55	0	9	0	-	0	9	0	-	0	9

Table II (cont'd)
Record of Sardine Eggs, 1954

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n
Cruise 5404 (cont'd):										
120.70	0	0	-	-	0	3	-	-	0	3
123.50	0	0	4	-	0	0	11	-	7	18
123.55	0	11	0	-	0	11	0	-	0	11
123.60	0	0	3	-	0	0	3	-	0	3
127.47	26	42	13	-	62	78	13	-	3	156
127.50	0	8	34	-	0	16	68	-	0	84
Total	2,394	3,918	1,932	41	6,061	6,931	4,369	131	847	18,339
Cruise 5405:										
83.80	2	2	8	-	2	2	10	-	0	14
83.90	0	3	0	-	0	3	0	-	0	3
87.35	0	0	0	-	0	0	4	-	0	4
87.55	0	0	13	0	0	0	26	0	0	26
87.60	0	0	814	-	0	0	1,421	-	30	1,451
87.70	0	0	6	-	0	0	9	-	0	9
90.50	0	0	0	-	0	0	2	-	0	2
90.60	0	18	97	0	0	36	170	24	24	254
90.70	0	0	3	-	0	3	3	-	0	6
93.30	0	5	2	-	0	7	22	-	7	36
93.35	94	76	39	-	582	136	139	-	34	891
93.40	0	5	0	-	0	12	0	-	7	19
93.45	41	88	22	-	157	273	39	-	11	480
93.50	0	0	74	64	0	0	123	192	36	351
93.55	0	24	13	-	0	87	39	-	16	142
93.60	0	0	23	-	0	3	67	-	0	70
93.70	0	6	0	-	0	10	4	-	2	16
93.90	0	0	-	-	2	0	-	-	0	2
97.30	0	0	3	5	0	0	3	5	0	8
97.32	0	12	0	-	19	14	2	-	12	47
97.36	0	0	0	-	25	13	25	-	50	113
97.40	0	3	87	-	0	14	183	-	0	197
97.45	0	50	0	-	0	97	0	-	5	102
97.50	3	0	-	-	16	0	-	-	0	16
97.80	0	0	0	-	0	0	3	-	0	3
100.35	0	0	8	-	0	0	13	-	0	13
100.40	145	106	-	-	297	182	-	-	48	527
100.45	430	1,947	-	-	791	2,277	-	-	21	3,089
100.90	7	3	-	-	7	3	-	-	0	10
103.35	12	0	2	-	22	0	2	-	5	29
103.40	9	72	156	-	21	93	249	-	0	363
103.45	5	193	118	-	41	563	167	-	0	771

Table II (cont'd)
Record of Sardine Eggs, 1954

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n
Cruise 5405 (cont'd):										
107.35	0	0	33	14	0	0	55	55	8	118
107.40	0	3	0	-	0	3	0	-	0	3
107.45	0	3	0	-	0	3	0	-	0	3
110.33	116	1,858	58	-	425	2,666	232	-	0	3,323
110.35	0	77	-	-	0	139	-	-	3	142
110.50	6	29	0	-	6	40	0	-	0	46
110.70	9	0	-	-	15	0	-	-	0	15
113.35	0	4	137	-	14	8	300	-	8	330
113.37	54	1,635	35	-	100	2,535	62	-	27	2,724
113.40	35	95	57	-	95	139	73	-	10	317
113.42	6	28	17	-	31	39	17	-	6	93
113.45	3	9	3	-	3	12	3	-	0	18
113.47	58	13	16	-	90	19	16	-	13	138
113.50	0	20	31	-	0	26	31	-	0	57
117.26	0	0	5	5	0	0	5	5	0	10
117.32	3	0	184	-	3	0	290	-	0	293
117.35	0	5	1,289	38	0	5	1,838	49	0	1,892
117.37	0	636	236	-	0	973	362	-	38	1,373
117.40	0	0	2	-	0	2	4	-	0	6
117.47	0	0	2	-	0	0	2	-	0	2
117.50	0	0	0	-	0	2	0	-	0	2
117.55	32	23	10	-	49	33	10	-	0	92
120.25	0	6	6	-	0	8	10	-	0	18
120.27	0	3	0	-	0	3	0	-	0	3
120.30	0	0	-	-	4	4	-	-	0	8
120.32	3	0	-	-	3	0	-	-	0	3
120.35	0	0	-	-	0	2	-	-	0	2
120.40	2	10	2	-	4	10	2	-	0	16
127.42	27	0	-	-	45	0	-	-	12	57
137.23	46	72	70	-	145	147	207	-	130	629
Total	1,148	7,142	3,681	126	3,014	10,646	6,244	330	563	20,797
Cruise 5406:										
70.60	0	0	10	-	0	0	10	-	0	10
80.80	0	0	0	-	0	0	6	-	0	6
83.40	0	0	0	-	0	2	0	-	0	2
83.60	0	14	0	-	0	14	0	-	0	14
83.80	0	5	3	3	0	8	3	3	0	14
85.60	0	0	0	0	0	49	0	0	0	49
87.60	0	0	0	19	0	0	0	48	0	48
87.80	0	2	0	-	0	4	0	-	0	4

Table II (cont'd)
Record of Sardine Eggs, 1954

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n
Cruise 5406 (cont'd):										
87.90	2	0	0	-	2	0	0	-	0	2
90.45	10	29	0	-	19	43	0	-	2	64
90.55	13	67	17	-	47	190	57	-	33	327
90.60	27	0	24	-	110	0	256	-	20	386
90.70	0	6	113	169	0	12	157	269	31	469
93.35	24	42	-	-	65	172	-	-	56	293
93.45	17	30	12	-	122	92	122	-	47	383
93.50	0	15	43	-	15	36	104	-	6	161
93.55	104	78	181	207	415	104	362	285	0	1,166
93.60	13	212	93	27	13	810	186	67	332	1,408
93.70	0	0	0	0	0	3	3	8	3	17
97.30	278	354	-	-	327	422	-	-	8	757
97.32	182	131	-	-	282	157	-	-	8	447
97.36	53	66	-	-	106	125	-	-	13	244
97.40	23	145	-	-	378	597	-	-	131	1,106
97.45	642	693	104	-	956	920	178	-	60	2,114
100.30	0	3	11	-	0	3	14	-	0	17
100.35	0	35	115	-	0	69	150	-	3	222
100.40	188	22	15	-	364	22	27	-	6	419
100.45	76	242	266	-	142	314	351	-	0	807
103.30	3	0	3	-	33	C	6	-	11	50
103.35	9	12	-	-	12	15	-	-	0	27
103.40	9	17	0	-	18	23	0	-	0	41
103.45	0	136	339	-	0	142	357	-	0	499
107.32	0	3	3	-	0	3	3	-	0	6
107.35	0	7	-	-	0	7	-	-	3	10
107.45	12	712	-	-	37	924	-	-	9	970
110.35	14	57	-	-	17	71	-	-	0	88
110.40	3	3	-	-	3	3	-	-	0	6
110.45	0	3	0	-	0	3	0	-	0	3
110.50	0	12	0	-	0	12	0	-	0	12
113.35	96	727	57	-	243	1,449	170	-	108	1,970
113.37	0	0	0	-	6	3	0	-	3	12
113.40	3	0	0	-	3	0	0	-	0	3
113.42	3	28	-	-	6	28	-	-	8	42
113.45	0	0	10	-	0	3	10	-	0	13
113.47	13	26	-	-	31	26	-	-	0	57
117.30	15	5	2	-	15	5	2	-	37	59
117.60	0	3	-	-	0	3	-	-	0	3
120.25	19	9	-	-	26	14	-	-	0	40
120.27	5	0	-	-	10	0	-	-	0	10
120.30	0	36	-	-	0	48	-	-	0	48
120.32	0	0	-	-	0	16	-	-	21	37
120.35	0	0	-	-	11	0	-	-	0	11

Table II (cont'd)
Record of Sardine Eggs, 1954

Station	Number of Normal Eggs A	B	C	D	Total Number of Eggs A	B	C	D	Uncl.	n
Cruise 5406 (cont'd):										
120.40	0	0	-	-	2	0	-	-	0	2
127.37	10	0	0	-	10	0	0	-	0	10
130.30	2	0	0	0	2	0	0	0	0	2
137.23	2	178	2	-	9	333	4	-	37	383
Total	1,870	4,165	1,423	425	3,857	7,299	2,538	680	996	15,370
Cruise 5407:										
83.43	3	0	-	-	3	0	-	-	0	3
85.40	59	0	8	-	123	0	36	-	10	169
85.45	2	0	-	-	2	0	-	-	0	2
87.35	0	4	-	-	0	4	-	-	0	4
90.37	33	50	-	-	1,025	317	-	-	113	1,455
97.30	0	42	-	-	0	42	-	-	0	42
100.29	2	2	0	-	4	2	0	-	0	6
100.30	2	10	-	-	14	31	-	-	0	45
103.30	473	726	33	-	846	1,116	40	-	306	2,308
103.35	0	0	-	-	8	22	-	-	17	47
107.32	4	4	4	-	4	4	4	-	0	12
117.30	30	0	0	-	78	0	0	-	0	78
120.25	0	65	-	-	0	85	-	-	0	85
120.30	162	15	-	-	388	38	-	-	56	482
120.35	226	50	-	-	389	185	-	-	94	668
123.37	3	166	3	-	13	253	3	-	5	274
127.34	0	22	-	-	0	60	-	-	0	60
130.30	23	64	294	-	27	64	366	-	0	457
133.25	5,768	134	717	-	6,619	173	835	-	95	7,722
Total	6,790	1,354	1,059	0	9,543	2,396	1,284	0	696	13,919
Cruise 5408:										
97.30	0	10	-	-	0	51	-	-	0	51
120.25	0	2	-	-	0	2	-	-	0	2
120.30	0	72	-	-	0	89	-	-	0	89
120.35	0	313	-	-	0	671	-	-	13	684
123.37	3	0	-	-	3	0	-	-	0	3
Total	3	397	0	0	3	813	0	0	13	829
Cruise 5412:										
120.40	0	0	24	-	0	0	60	-	0	60
123.37	0	55	-	-	0	61	-	-	0	61
137.23	0	2	-	-	0	17	-	-	0	17
Total	0	57	24	0	0	78	60	0	0	138

Table III
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.0	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5401:																			
85.55		2.7																	2.7
120.30	15.9	5.2																	21.1
120.35	5.3		5.3																10.6
120.45	10.8	45.5	2.7																59.0
120.50	2.6	60.9																	63.5
120.60		2.9																	2.9
120.70	12.1	15.1						3.0											30.2
120.80	12.7	25.4	17.9																56.0
123.37	329.0	376.0	578.0	82.2	103.4														1,468.6
123.40	3.1	3.1	12.4			6.2	12.5	15.6						3.1					56.0
123.50			2.7				2.7												5.4
127.50						6.7	3.4	26.9	37.0	10.1	3.4	3.4	6.7						97.6
130.30	3.0	21.0	3.0	15.0															42.0
130.35	132.9	121.9																	254.8
133.25		7.5	2.5																10.0
133.40														2.5					2.5
137.23			2.8	8.5	14.2	25.6	17.0	2.8					5.6	2.8	2.8				82.1
137.30	3.0				3.0		3.0				3.0		3.0	3.0					18.0
140.30						2.9			2.9										5.8
143.30			3.2																3.2
143.35		5.8	32.2	32.1	5.8	5.8													81.7
147.20					2.8				2.8										5.6
147.25	6.2		6.2	12.3										6.2					30.9
147.30	3.1	134.1	212.2	65.5	53.0	34.3	9.3	21.9	6.2	12.5	9.4	15.6	3.1		3.1				583.3
150.19	800.8	102.2	5.7	11.3	5.7	5.6	2.8				5.6							2.8	942.5
150.30				3.1															3.1
Total	1340.5	929.3	886.8	230.0	187.9	87.1	50.7	70.2	48.9	22.6	21.4	19.0	18.4	17.6	5.9			2.8	3,939.1

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5402:																			
83.40	1.7																		1.7
85.55									3.4										3.4
103.30	2.2	6.7	2.2																11.1
110.60		6.2																	6.2
113.45	10.9	10.9																	21.8
113.50	10.2	6.7																	16.9
117.55		2.8																	2.8
120.25	26.8	22.6	4.2									2.1							55.7
120.30	2.3																		2.3
120.37	4.0	28.0																	32.0
120.40	2.4	4.8		2.4	2.4	2.4	2.4	2.4	2.4	12.1	7.3	2.4	7.2	9.6	7.2				67.4
120.42		50.0			6.2							6.2							62.4
120.45		70.4	11.7									11.7							93.8
120.55		3.0	3.0	3.0	3.0	6.1	3.0												21.1
120.60	2.4	11.9																	14.3
120.70				2.7	2.7	8.2		2.7											16.3
120.80	9.2	24.5	3.1		3.1		6.2	3.1					3.1						52.3
123.37											9.2	9.2	9.2	9.2					36.8
123.40			57.6	28.8	28.8	19.2		9.6	19.2	9.6	19.2			9.6					201.6
123.42		6.2	3.1	3.1	9.3			3.1	3.1	3.1	6.2								37.2
123.45	3.0	3.0	3.0	3.0	30.4	24.3	6.1	24.3	3.0	3.0	6.0	6.1	3.0						118.2
127.34	35.4																		35.4
130.30		2.8	5.6	2.8			8.4			2.8									22.4
130.35						6.3													6.3
130.60					1.9	1.9													3.8
133.25		4.5																	4.5
137.23			2.0			3.9	4.0												9.9
137.30											2.7		2.7	2.7					8.1
Total	110.5	265.0	95.5	45.8	87.8	72.3	30.1	45.2	31.1	30.6	50.6	37.7	25.2	31.1	7.2				965.7

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5403:																			
97.60	4.7																		4.7
100.40	9.6	12.1	4.8																26.5
100.45	15.9																		15.9
100.50	4.9	9.7																	14.6
100.70	4.4	4.5	2.2		4.5														15.6
100.80	12.9	17.9		2.6															33.4
100.90	2.3						2.3												4.6
103.35	18.6	4.7																	23.3
103.40	13.0	10.3	5.2																28.5
103.45	5.9	14.7	5.9																26.5
103.50	36.5	38.9		2.4															77.8
103.55		16.8																	16.8
103.60	5.2	7.7																	12.9
107.45	9.6	105.6	43.2	7.2		4.8	2.4												172.8
107.55	8.3	16.6	6.7	6.7															38.3
107.60	7.1	16.6	2.4	9.4															35.5
110.45		3.0	3.0	3.0	6.0		3.0												18.0
110.50	12.8	112.7	80.5	48.3	19.4	9.6	16.1		3.2										302.6
110.55	22.1	56.8	56.8	28.5	6.4	3.2	3.2		3.2										180.2
110.60	2.4	9.7	1.2																13.3
110.70	24.5	27.3	13.7																65.5
110.80				2.3															2.3
113.40		6.3	3.2																9.5
113.45		2.8																	2.8
113.47		2.8	2.8																5.6
113.50	23.4	2.0	13.7	13.7	9.8	2.0													64.6
113.55	30.6	30.6	17.0	3.4															81.6
113.60	31.1	72.6	65.8	13.8	3.5	3.5													190.3
117.40	1.7																		1.7
117.60	24.2	6.6	8.8																39.6
120.40	374.8	9.8																	384.6
120.42	14.0	30.0	6.0	6.0	4.0	2.0	2.0	2.0											66.0
120.45	260.0	239.2	46.8	15.6	10.4														572.0
120.47	17.0	19.8				2.8													39.6
120.50	5.4	16.3	5.4	2.7		2.7													32.5
120.70						2.4													2.4
123.37	34.6	29.7	2.5	2.5															69.3
123.40	233.7	265.1	20.0	2.8														8.6	530.2
123.42								2.7											2.7
123.50											3.0								3.0
127.34	53.8	18.0	15.0	15.0	3.0	3.0	3.0	3.0	3.0										116.8
127.37			5.7	2.8	5.6	2.8	2.8	2.8	2.8					2.8					28.1

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5403 (cont'd):																			
127.55		2.9							2.9										5.8
130.35	132.2	243.8																	376.0
130.40		8.5	5.6																14.1
133.25		13.0																	13.0
133.30	2.3		2.3			6.8	2.3	2.3	6.8										22.8
137.23		2.2	15.7	44.6	62.5	129.3	169.5	98.1	20.1	2.2	2.2			2.2	11.2	2.2			562.0
137.30	11.1	30.5	5.6	5.5	55.4	24.9	13.8		2.8		2.8	2.8	2.8	5.6					163.6
Total	1470.6	1538.1	467.5	238.8	190.5	199.8	220.4	110.9	44.8	2.2	8.0	2.8	2.8	10.6	11.2	2.2		8.6	4529.8
Cruise 5404:																			
90.70		2.8																	2.8
93.50	9.3	9.3																	18.6
93.90	3.2																		3.2
97.40		5.8								2.9									8.7
97.45	5.8								2.9										8.7
97.50	189.1	136.9	13.1	9.8	3.3	3.3	3.3	3.3											362.1
97.55	50.3				3.0														53.3
97.60	3.0																		3.0
97.70	5.8																		5.8
97.80	3.1	3.1		6.2	3.1														15.5
97.90						2.8													2.8
100.50	3.0																		3.0
100.55	5.8	14.3																	20.1
100.60	9.0	21.0																	30.0
100.70	2.9	2.9			5.8	2.9	2.9					2.9							20.3
100.80			3.2																3.2
103.35	6.4																		6.4
103.40	418.5	117.8	29.4																565.7
103.45	8.8	17.6	8.8	8.8		5.8		2.9	2.9										55.6
103.50		6.0	6.1		3.0														15.1
103.55	7.8	3.9	7.8	3.9	3.9	3.9	3.9		3.9										39.0
103.60	2.9	2.9	5.9	11.7	2.9														26.3
103.80			3.2		3.2	6.4													12.8
107.35	3.7	7.4																	11.1
107.40		3.7																	3.7
107.45	3.2										3.2		3.2						9.6
107.50	3.6	98.3	7.3								3.6								112.8

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5404 (cont'd):																			
107.60	3.5		7.0								3.5								14.0
107.70											3.4					3.4			6.8
107.80			5.9																5.9
110.35	16.0																		16.0
110.40	3.1		3.1	3.1															9.3
110.50		3.0																	3.0
110.55					3.0														3.0
110.60	3.4																		3.4
110.80	6.4	22.4	6.4	6.4		3.2		3.2											48.0
110.90	2.8																		2.8
113.35	13.8	13.8				2.8													30.4
113.37	83.5	30.0	6.7																120.2
113.40	69.7	17.4	7.0	3.5	3.5	3.5	3.5												108.1
113.42	56.9	14.2	3.6																74.7
113.45	92.0	39.8			3.1														134.9
113.47		2.9			2.9														5.8
113.50			2.3				2.3	2.3											6.9
113.55	9.5	3.2																	12.7
117.28		5.4																	5.4
117.30	23.4	7.8	7.8			2.6													41.6
117.32	6.3	6.3	12.6	6.3															31.5
117.35	6.6	6.6																	13.2
117.37	13.9	33.4																	47.3
117.40	7.4	48.2																	55.6
117.42		19.6	2.8																22.4
117.47								5.7	2.9	2.9		2.9							14.4
117.50		39.3	2.8		8.4			2.8		2.8									56.1
117.55					6.2														6.2
120.30	10.8																		10.8
120.32		8.2																	8.2
120.42	7.4	11.2	7.5	3.7															29.8
120.45			7.8								3.9	3.9		3.9					19.5
120.47	22.6	61.6	3.2	16.2	16.2		6.5			3.2									129.5
120.50	52.5	7.5	7.5		7.5														75.0
120.55		3.0	3.0																6.0
120.60		3.3																	3.3
123.40				22.1	14.7	7.4	7.4	29.5	7.4	7.4	14.8	14.7		7.4					132.8
123.42			12.6	63.0	75.6	75.6	81.9	107.1	88.2	88.2	69.3	50.4	18.9	12.6					743.4
123.45		6.9	13.8	20.7	62.1	48.3	55.2	158.7	200.1	248.4	179.4	186.3	75.9	13.8	6.9				1276.5
123.47	23.1	81.0	135.1	69.5	27.0	19.3	23.2	11.6					3.9	3.9	3.9				401.5

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5404 (cont'd):																			
123.50	57.5	39.5	46.7	28.7	10.8	7.2		3.6			3.6	3.6	3.6						204.8
123.55	7.2	25.1		7.2	3.6														43.1
123.60									2.8										2.8
127.37						12.0	4.0	4.0	16.1	4.0	4.0	12.0	4.0						60.1
127.40		3.7	7.4	3.7			14.8	22.4		3.7	3.7		7.4		3.7				70.5
127.42				8.4					4.2		4.2	4.2			4.2				25.2
127.45			3.4	3.4		3.4	10.2	27.3	37.5	34.1	23.8	13.6	3.4	3.4					163.5
127.47	13.0	29.2																	42.2
127.50	28.2	5.6					2.8												36.6
127.55		9.5			4.8														14.3
127.60		10.1	6.8	23.6						3.4									43.9
130.35							3.8			3.8									7.6
130.40				2.8						2.8	8.4								14.0
130.45			3.2	3.2		3.2	3.2	6.4	3.2										22.4
130.50	3.1	15.3					3.1	3.1				3.1							27.7
133.35											3.0								3.0
Total	1388.8	1087.7	410.8	335.9	277.6	213.6	232.0	393.9	372.1	407.6	331.8	297.6	120.3	45.0	18.7	3.4			5936.8
Cruise 5405:																			
80.80			2.6	2.6															5.2
83.80	30.2																		30.2
87.50		3.9																	3.9
87.55	4.3																		4.3
87.60	118.4	29.6																	148.0
87.70	3.0	8.9																	11.9
90.50		7.2	4.8																12.0
90.70	15.7	3.1	6.3																25.1
93.30	21.9	4.9																	26.8
93.35	18.4	10.5																	28.9
93.40	4.9																		4.9
93.45	55.1	63.5	2.8																121.4
93.50	7.7																		7.7
93.55	68.4	44.7	7.9																121.0
93.60	20.5		2.6																23.1
93.70	32.3	20.2	2.0																54.5
97.30		2.6																	2.6
97.32	2.4	16.8	2.4		2.4														24.0

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5405 (cont'd):																			
97.36	10.0	5.0	7.6	2.5	7.5		7.5												40.1
97.40	2.8																		2.8
97.45							2.6												2.6
97.90					2.8		2.8												5.6
100.35	13.0	13.0	10.4	10.4	5.2	5.2	2.6	2.6	2.6										65.0
100.40	66.7	33.4	3.0	6.1		3.0	6.0	3.0	3.0										124.2
100.45	24.1	10.3	3.4																37.8
100.55					3.7														3.7
100.70				3.5															3.5
100.90					3.4														3.4
103.35				5.0	2.5		2.5	5.0		2.5									17.5
103.40	159.0	150.0	48.0	21.0	3.0	3.0	6.0											3.0	393.0
103.45	36.0	46.2																	82.2
103.70								2.7											2.7
107.35	30.2	19.3	5.5	2.8															57.8
107.40		7.8	10.4	2.6							2.6	5.2							28.6
107.45		20.5																	20.5
107.50													6.6						6.6
110.33	183.5	9.7		3.2	3.2														199.6
110.35	24.7	27.7	49.3	21.5	9.2	6.2													138.6
110.55					3.4														3.4
110.90		5.6																	5.6
113.35	18.3	14.3	4.0		2.0														38.6
113.37	8.1	19.1	8.1	2.7															38.0
113.45		5.8																	5.8
113.47							3.2												3.2
113.50	2.8																		2.8
117.28			55.4	46.2	9.2	9.2	4.6	9.2	4.6										138.4
117.30		9.4	7.0	4.7	7.0	4.7													32.8
117.32	11.1	33.3	2.8	2.8															50.0
117.35	16.3	38.1	10.9																65.3
117.37	47.2	9.5		6.4															63.1
117.40	92.4	44.1	4.2																140.7
117.42		3.8	3.8																7.6
117.45	2.8	2.8		2.8															8.4
117.47		98.0	57.4	2.4	7.2	9.6	2.4	9.6		2.4				2.4					191.4
117.50	10.0	19.9	12.5	2.5	7.5			2.5	2.5				2.5						59.9
117.55	2.1	18.9																	21.0
120.27		2.9	2.9	5.8	11.4	8.6													31.6
120.30				4.5		4.5		4.5					4.5						18.0

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5405 (cont'd):																			
120.32	36.3	44.0	23.3	33.6	13.0	5.2		2.6											158.0
120.35	21.8	111.3	55.6	48.4	14.6	7.2	2.4												261.3
120.37		15.7	5.9	2.0	2.0	2.0													27.6
120.40	3.8	3.8																	7.6
120.42		3.3																	3.3
120.50		15.6																	15.6
120.55		109.5	32.5	17.8															159.8
120.60		8.2			2.7														10.9
120.70			12.7																12.7
123.40										3.4			3.4						6.8
123.50							25.2	69.3	37.8		18.9		6.3				12.6		170.1
123.55							16.2	48.6	22.7	9.7		6.4		6.4	9.7		3.2		122.9
123.60				2.9	2.9		2.9	11.5		2.9	2.9								26.0
127.37		5.7	2.9	8.6	11.4	14.3		2.9					5.7			2.9	2.9		57.3
127.40						2.9													2.9
127.42									3.0										3.0
133.50												2.3							2.3
137.23		12.0																	12.0
Total	1226.2	1213.4	470.9	275.3	137.2	85.6	86.9	174.0	76.2	20.9	24.4	13.9	29.0	8.8	9.7	2.9	18.7	3.0	3877.0
Cruise 5406:																			
70.60		4.8																	4.8
83.80													2.6						2.6
87.60	57.6	153.6	38.4		9.6		9.6	9.6											278.4
87.80	2.4	11.8	2.4	2.4	2.4														21.4
90.45	7.1	2.4																	9.5
90.55	50.1	183.7	80.2	13.3	6.6		3.3	10.0			3.3								350.5
90.60	112.8	167.6	37.6	23.9	17.1	6.8	10.2	3.4											379.4
90.70	6.3	125.2	112.7	87.7	87.7	119.0	62.6	31.3	18.8	25.0	25.1	12.6		6.3					720.3
90.80	3.4	13.5	6.8	3.4	20.2	10.1	20.1	3.4				3.4							84.3
93.35	14.9																		14.9
93.45	221.7	19.9																	241.6
93.50	27.4	48.8	9.2	3.0															88.4
93.55	440.7	25.9																	466.6
93.60	13.3	99.6	66.4	33.2	13.3	13.2	13.3		13.3										265.6
93.70	7.9	7.9	2.6				2.6					2.6			2.6				26.2
97.30	5.4	10.8																	16.2

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5406 (cont'd):																			
97.32	18.0	23.1	2.6		7.7	7.7													59.1
97.36	13.2	13.2																	26.4
97.40	34.0	39.8	2.8	2.8	2.8		2.8		2.8										87.8
97.45	68.2	49.2	8.2	5.4		5.5													136.5
100.29											2.7								2.7
100.30	8.0	106.8	64.1	32.0	5.3	2.7				2.7									221.6
100.35	34.6	83.5	2.9																121.0
100.40	24.6	129.3	36.9	3.1			3.1	3.1				3.1							203.2
100.45	120.8	226.5	66.4	12.0	33.2	24.2	18.1	33.2	6.0	9.1	3.0								552.5
100.80													3.0						3.0
100.90						2.3													2.3
103.35	5.8	20.5	5.8		2.9														35.0
103.40		8.7	2.9								2.9	2.9							17.4
103.45	147.6	218.2	6.0																371.8
107.32		2.9																	2.9
107.40	24.6	46.1									3.1								73.8
107.45	15.4	24.6																	40.0
107.50		5.7																	5.7
110.35	2.7						2.7							2.7					8.1
110.40		3.0																	3.0
110.45		6.1	21.2	48.6	48.7	18.2	18.3	6.0	3.0	3.0	3.0								176.1
110.50		24.3	3.0		3.0		3.0												33.3
113.40					2.6														2.6
113.42	25.2	25.3																	50.5
113.45	15.3	20.4	2.6	2.6															40.9
113.47		5.2	5.1																10.3
113.55	3.1																		3.1
113.70			2.8	5.6			2.8												11.2
117.30	4.9																		4.9
117.40									2.6										2.6
117.42					2.9						2.9								5.8
120.55		2.7	5.4																8.1
127.42	3.2																		3.2
127.50									2.3										2.3
137.23	7.4	3.7																	11.1
Total	1547.6	1964.3	595.0	279.0	266.0	209.7	172.5	100.0	48.8	39.8	46.0	24.6	5.6	9.0	2.6				5310.5

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5407:																			
83.48			2.4	4.8	4.8	2.4	4.8												19.2
85.40	15.5																		15.5
87.35										4.5									4.5
90.37	137.7	12.5																	150.2
90.45	3.2				3.2														6.4
93.40					18.1														18.1
100.29		7.3							2.4										9.7
100.30	7.1	23.6	2.4																33.1
100.40													2.8		2.8				5.6
100.50																2.9			2.9
103.30	3.3	20.0																	23.3
107.32		17.3	13.8																31.1
107.40		6.6																	6.6
120.25	3.4																		3.4
120.35	100.4	6.3	3.1																109.8
123.37		17.9	10.3	2.6															30.8
123.40											2.8								2.8
127.40						2.9													2.9
127.50		8.7																	8.7
130.30	7.6																		7.6
130.45			2.7																2.7
130.50					3.1									3.1					6.2
130.60				6.5	3.2														9.7
133.25	84.0	5.6																	89.6
133.30						8.6				2.9									11.5
133.35		6.9	27.5	34.3	10.3	6.9	3.4	3.4											92.7
Total	362.2	132.7	62.2	48.2	42.7	20.8	8.2	3.4	2.4	7.4	2.8		2.8	3.1	2.8	2.9			704.6
Cruise 5408:																			
97.30	15.8																		15.8
117.40			2.9			2.9													5.8
120.25		2.3	4.6		2.3	4.6													13.8
120.30					2.5							2.5							5.0
120.35	70.4	31.3	13.0	10.4	10.4	5.2	5.2		10.4										156.3
120.45		36.6	14.6		11.0		3.7	14.6	3.7										84.2
123.37	2.7	5.4																	8.1
123.45	63.7	103.1	21.2																188.0
127.45					3.0	6.0	3.0												12.0
127.50		5.6	8.4	11.2	11.1	13.9	19.5	8.3	11.1	13.9	8.4								111.4

Table III (cont'd)
Record of Sardine Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	3.00	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5408 (cont'd):																			
130.30		3.0		3.0	15.0	9.0		9.0											39.0
130.35					5.4	10.8	16.2												32.4
130.45				3.4															3.4
133.25				5.2	5.2		15.7	7.8	2.6	2.6									39.1
133.30					3.2														3.2
137.23									2.8	2.8	5.6								11.2
137.30					2.7	2.7		2.7	2.7	8.2	2.7								21.7
Total	152.6	187.3	64.7	33.2	71.8	55.1	63.3	42.4	33.3	27.5	16.7	2.5							750.4
Cruise 5410:																			
107.32														3.2					3.2
117.30		9.2		1.8			1.8												12.8
120.30			2.6			2.6													5.2
120.35						1.0													1.0
120.50									7.9										7.9
130.30	16.0	30.5	2.7			1.3													50.5
137.23				2.0	5.9														7.9
137.30					5.9		5.8	2.9	2.9	2.9		2.9							23.3
Total	16.0	39.7	5.3	3.8	11.8	4.9	7.6	2.9	10.8	2.9		2.9		3.2					111.8
Cruise 5412:																			
120.35												6.1		6.1					12.2
120.40	3.0																		3.0
123.37		2.8																	2.8
130.30				4.9		4.9	14.8					4.9							29.5
130.35			2.9	11.6	5.8		2.9			2.9									26.1
130.40								3.0											3.0
137.23	578.2	76.8	1.8	16.5	1.8	3.7													678.8
140.30										2.1									2.1
143.26	3.8																		3.8
147.20		12.4	10.4	4.1															26.9
Total	585.0	92.0	15.1	37.1	7.6	8.6	17.7	3.0		5.0		11.0		6.1					788.2

Table IV
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5401:																				
77.50			2.2	2.2	17.9	29.0	46.8	53.5	29.0	24.6	40.1	49.0	29.0	4.4	8.9	2.2				338.8
77.55		2.4	9.8	17.1	24.6	39.2	17.1	46.5	24.5	22.1	9.8	4.9	4.8							222.8
80.51		4.4	36.5	49.6	67.2	77.4	45.3	13.2	33.6	51.1	24.8	23.4	13.1	8.8			1.5	1.5		451.4
80.55		10.3	16.4	12.4	10.2	4.0														53.3
80.60					2.9			2.9	2.9											8.7
80.80											4.4									4.4
82.47			4.7	11.7	18.8	2.3	2.3			2.3										42.1
83.40	427.9	230.7	33.6	6.7		9.0	6.7			2.2										716.8
83.43	55.1	35.8	68.8	44.0	41.2	11.0														255.9
83.48	10.0	12.5	15.0	32.5	37.5	12.5	32.5	12.5	7.5											172.5
83.51	7.9	13.2	31.6	68.4	31.5	7.9	15.8	10.5												186.8
83.55			9.7	12.1	14.5	4.8	4.8	7.3	9.7	4.8	2.4							2.4		72.5
83.60				2.4							4.8	2.4	2.4							12.0
85.40	185.2	141.4	62.4	70.7	35.4	10.4	6.2													511.7
85.45	106.0	65.3	5.4	2.7	2.7			2.7												184.8
85.50		2.7	19.2	38.4	2.7	5.5	5.4	2.7			2.7									79.3
85.55						2.7	2.7	13.3	2.7	2.7			5.3		5.4	2.7				37.5
85.60								4.3					2.2		2.2					8.7
87.35	22.9	31.4	42.9	17.2	17.2	14.4	14.3	1.4	5.8											167.5
87.40	15.3	33.7	49.0	99.4	91.8	67.3	41.4	13.7	4.6	1.5										417.7
87.45	30.3	75.6	125.3	164.2	149.0	62.6	49.7	15.1	6.5	2.2									4.3	684.8
87.50	9.6	35.0	30.2	11.1	12.8	1.6														100.3
87.55				2.2	4.5							2.2								8.9
87.60				4.6	4.6	4.6	4.6	4.6	6.9	2.3	4.6		2.3							39.1
90.28	87.7	44.8	21.5	19.6	23.4	9.7	7.8	2.0			2.0									218.5
90.30	90.3	168.0	258.3	174.3	174.3	113.4	121.8	75.6	8.4	4.2	2.1									1190.7
90.37	9.9	179.2	285.5	63.1	33.2	23.3	6.6	6.6												607.4
90.45	48.2	28.1	8.0	16.0	22.1	36.2	12.0	6.0	2.0											178.6
90.53	8.7	5.8	2.9	2.9	14.5	17.4	5.8	2.9												60.9
90.60			3.2		3.2			1.6		1.6	1.6		1.6			1.6				14.4
93.27		22.6	89.1	45.2	47.9	37.2	20.0	8.0	5.4	1.3									9.3	286.0
93.30	58.5	131.0	30.4	25.8	4.7	4.6	4.7	4.6	2.3											266.6
93.40	160.0	98.1	51.6	43.9	15.5	7.8		2.6		2.6										382.1
93.50					2.7	2.7		10.7	2.7	2.7										21.5
93.60				3.8				3.8												7.6
97.30	63.7	23.8	18.8	35.0	33.7	30.0	18.7	8.8	1.2	1.2										234.9
97.32	127.4	876.2	621.4	192.4	158.6	39.0	13.0	2.6	10.4	2.6										2043.6
97.40	97.6	36.3	5.6				2.8	2.8												145.1
97.50	165.3	95.0	3.8	5.7	3.8	1.9														275.5
100.29		2.7	5.4	16.1	13.4	5.4			5.4		2.7									51.1
100.30	54.0	32.9	11.8	28.2	25.9	7.1	9.4	11.7	7.1	4.7										192.8
100.40	90.1	45.0	73.5	94.8	64.0	26.0	7.1	4.8	2.4										2.4	410.1

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5408:																				
63.52				3.5																3.5
67.50														10.2		10.2				20.4
73.50														11.8						11.8
73.60				15.3	15.3						15.3									45.9
80.51					2.7			2.7		2.7										8.1
80.55					33.7	33.7	11.2	11.2		11.2		11.2								112.2
80.60							5.9	5.9	29.7	5.9										47.4
82.47	2.7	8.2	5.5			2.7	2.7													21.8
83.48								2.6												2.6
83.51		2.3																		2.3
83.60							3.2			3.2										6.4
85.39	2.7	8.2		2.7	5.5		2.7													21.8
85.45	9.6				2.4															12.0
85.60										3.2										3.2
87.35		5.8	2.9	2.9			5.8													17.4
87.40		3.1	3.1		3.1															9.3
87.45					2.5															2.5
87.50	9.5							2.4												11.9
90.28	6.6	6.7	6.7	1.3	1.3					1.3										23.9
90.30		9.0	11.2	4.5			2.2					2.2								29.1
90.37	14.0		5.6																	19.6
90.45	5.4				2.7															8.1
93.27	30.2	24.5	3.8	7.5	5.7	7.5	1.9													81.1
93.30	10.2	12.8	2.6		5.1	2.6	2.6													35.9
93.35	2.7	2.7	5.4	2.7	2.7					2.7										18.9
97.30	6.3	22.1	34.7	15.8	9.5	3.2														91.6
97.32		2.7	2.7	8.2			2.7													16.3
100.29		2.8	11.3	11.2		5.6														30.9
100.30	5.8	17.3	2.9	26.0	11.6	2.9	11.6													78.1
100.35	9.6	6.4																		16.0
103.30		10.8	30.4	13.0	17.3	17.3	4.4		2.2											95.4
103.35		15.1	42.3	69.4	96.6	39.3	33.2	24.2	9.0	9.1	3.0									341.2
107.32	3.1	36.8	6.1	24.6	18.4		3.1	9.2												101.3
107.35	11.0				2.7						2.7									16.4
107.40		24.9	28.6	14.3		7.1	3.6	7.1	3.6		3.6									92.8
110.33						2.6														2.6
113.30	19.1	19.2	14.3	4.8			4.8													62.2
117.26	13.9	11.6				2.3														27.8
117.30	2.9	11.7		2.9	2.9															20.4
120.25			2.3	2.3																4.6

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5407 (cont'd):																				
90.28	43.5	17.9	5.2	2.6	5.1	15.3	7.7	2.6	15.3	7.7	2.6		2.6							128.1
90.30	228.4	31.3	6.2	3.1	9.4	12.6	12.5	6.3	9.4	3.1	3.1									325.4
90.37			4.2	4.2																8.4
90.60								13.0		39.1	32.6	26.1	13.0	26.1	26.0					175.9
90.70				11.7	11.7		11.7	23.4	35.1	23.4	82.0	23.4	46.9	23.4	11.7	23.4		11.7		339.5
93.27	223.2	301.4	223.2	167.4	111.6	33.5	22.3	11.2	22.4	11.2		22.3							44.6	1194.3
93.30	66.7	19.0	52.4	66.7	9.6	28.5	9.5	4.8	23.8	14.3	9.5				4.8					309.6
93.35										3.3										3.3
93.50									4.3				12.8						4.3	21.4
97.30	70.8	14.2	42.5	56.6	42.5	14.2	14.2				14.2									269.2
100.29					4.8	4.9		2.4												12.1
100.30	2.4		2.4	7.1	2.4		2.4			4.8										21.5
103.30	20.0	6.7	3.3								6.7									36.7
103.35								2.8												2.8
107.32		83.1	10.4				3.5													97.0
107.40				19.8	6.6			3.3	9.9			3.3								42.9
110.35								2.9												2.9
113.30					1.9	5.7		1.9												9.5
117.26		2.4		2.4	2.4															7.2
120.25	3.4		3.4	3.4	3.4	3.4	3.4													20.4
120.35						3.1														3.1
120.45							7.7					3.8								11.5
120.50				6.9		6.9				13.8	6.9		6.9							41.4
123.37							5.1	2.6												7.7
127.34		11.0	6.6	8.8	6.6			2.2	6.6											41.8
127.40				8.7	2.9															11.6
127.50	23.2	20.3		2.9			2.9		2.9											52.2
130.35		2.1		2.1																4.2
130.50	3.1	9.2			3.1		6.2	6.2	12.3			9.2								49.3
130.60				3.2	3.2	6.5	6.4	16.2	6.4		3.2									45.1
133.25			5.6			5.6	5.6													16.8
133.30			2.9	20.1	28.7	14.3	11.5	8.6	5.8	2.9	2.9									97.7
133.35	3.4	58.3	147.5	133.7	109.8	58.3	20.6	37.7	20.6	24.0	6.8									620.7
133.40								5.7												5.7
137.23									5.1											5.1
137.30						23.2	17.4	5.8	5.8											52.2
Total	1281.7	991.6	791.5	787.4	707.6	665.3	533.1	523.7	561.2	557.5	480.1	261.3	151.6	99.0	67.1	35.1	7.1	11.7	48.9	8562.5

Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5406 (cont'd):																				
127.37	19.2																			19.2
127.42		3.2																		3.2
130.35		6.4																		6.4
133.30	715.4	285.6	59.8	8.2																1069.0
133.40		2.7			2.7															5.4
133.45		2.9	2.9																	5.8
133.50													2.7							2.7
137.23		3.6	22.2	55.5	35.1	22.2	18.5	7.4												164.5
137.30		4.9	19.8	61.7	46.9	12.3	2.5	2.5												150.6
Total	1996.5	1053.3	517.4	632.3	639.1	659.1	383.6	199.2	119.3	96.7	22.3	40.7	20.9	27.5	15.1	12.9	2.1	4.6	54.7	6497.3
Cruise 5407:																				
60.60									11.4											11.4
77.50					12.3	110.9	86.2	86.2	86.3	74.0	61.6	36.9	24.6		24.6					603.6
77.55				11.7	11.7	58.6	23.4	70.3	152.4	234.4	211.0	105.5	23.4	35.2		11.7				949.3
77.65							10.5		10.5	21.0	10.5	10.5								63.0
80.51	24.6	90.2	84.1	38.9	22.5	20.4	16.4	20.5	24.6	20.5	10.2	6.1								379.0
80.55	4.8	16.6	11.9		2.4	2.4	7.2	7.2	2.4											54.9
80.60									9.1				9.1							18.2
80.70							5.0													5.0
82.47	34.9	72.2	23.2	34.9	35.0	32.6	25.6	16.3	2.3											277.0
83.40	6.3					2.1														8.4
83.43	55.1	29.0	11.6	5.8	11.6	8.7	8.7													130.5
83.48	99.2	33.9	24.2	58.1	116.1	84.7	104.0	53.3	14.5	12.1										600.1
83.51	56.7	15.2	9.5	9.5	17.0	34.0	28.4	7.6	7.6	1.9										187.4
83.55	18.4				27.6	9.2		18.4	9.2		9.2									92.0
83.60				24.6			12.3	24.6		12.3			12.3							86.1
85.40	15.3	66.2	45.8	15.3	10.2	12.7	2.6		2.6											170.7
85.45	32.6	10.0	12.5	7.5	7.5	10.0	7.5		2.5											90.1
85.50	5.7	5.7	11.3	8.5	2.8	2.8	2.8	11.3	2.8											53.7
85.55	20.5	36.0	10.3	5.1	10.2			5.1	5.1	5.1										97.4
85.60					28.6	35.7		21.4	14.2	28.6	7.1	14.2		14.3			7.1			171.2
87.35	54.3	9.0	22.6	36.1	13.6	4.5	4.5	4.5	18.0											167.1
87.40			8.7				17.4	17.4												43.5
87.45	165.2	28.2																		193.4
87.50		2.5																		2.5
87.60					12.8															12.8

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5406 (cont'd):																				
93.45	89.6	10.0	7.5			2.5	2.5													112.1
93.50			3.0		3.0															6.0
93.55		51.8			51.8	25.9	25.9	25.9				25.9								207.2
93.60				6.6	6.6	6.6														19.8
97.30		5.4		2.7		8.1	2.7	2.7		2.7										24.3
97.32		2.6	5.1	5.1	12.8	5.2	2.6		2.6	2.6										38.6
97.36		6.6	13.2	26.4	33.0	19.8														99.0
97.40			2.8						2.8											5.6
97.45	10.9	19.1	2.7	27.2	30.0	2.7	2.7	2.7		2.7										100.7
100.29	2.7	2.7	5.4	5.5	10.9	5.4	2.7	8.2	8.2	13.7										65.4
100.30	2.7	2.7	2.7		8.0	2.7														18.8
100.35			2.9		2.9	17.3	17.3	14.4	2.9			5.8		2.9						66.4
100.40				3.1	30.8	21.5	3.1	9.3	6.2	3.1	3.1									80.2
100.45					3.0					3.0										6.0
103.30									2.7											2.7
103.45		6.0			3.0	3.0														12.0
107.45							6.2		3.1											9.3
110.35	2.7																			2.7
110.80		2.8																		2.8
113.30						2.3	6.8		6.8	6.8	6.8	6.8	4.6	11.3	4.5	2.3				59.0
113.32	5.5	16.5	11.0					5.5												38.5
113.35						2.8	2.8	2.8		2.8										11.2
113.37	3.1					6.2		3.1												12.4
113.40			2.6																	2.6
113.50																2.7				2.7
117.26			10.8																	10.8
117.28				6.1																6.1
117.30	19.5	4.8																		24.3
117.45											3.0					3.0				6.0
117.50													3.0		3.0					6.0
120.27									2.4											2.4
120.30						3.0	6.0	3.0	6.0	3.0										21.0
120.32			5.3	2.7		8.0	2.7	2.7												21.4
120.35		2.8					5.7													8.5
120.37					2.6	2.6			2.6											7.8
120.42															5.0	4.9		2.5		12.4
120.45														2.7						2.7
123.37																	2.1	2.1		4.2
123.40		4.3		4.3	2.2					2.2		2.2								15.2
127.34	3.0																			3.0

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5405 (cont'd):																				
133.30						6.0		6.0		12.1			6.0							30.1
133.35					3.1			3.1										6.2		12.4
133.40														3.0						3.0
133.60					3.3	3.3														6.6
Total	1334.5	1099.7	1213.9	1638.5	2183.0	1450.0	1232.9	1137.5	582.4	241.7	119.5	67.5	48.6	42.5	36.8	41.7	17.4	6.2		12494.3
Cruise 5406:																				
73.60		3.0																		3.0
80.51								2.2		2.2										4.4
80.55									11.2											11.2
80.60								11.4												11.4
82.47				18.8																18.8
83.40	12.4	8.2																		20.6
83.51			1.5	1.5		1.5	3.1													7.6
83.55						54.7													54.7	109.4
83.60								13.7												13.7
83.80															2.6					2.6
85.39	22.5	12.5	10.0	10.0	5.0	2.5														62.5
85.45	78.4	15.7		5.9	2.0		2.0													104.0
85.50	22.4	22.4		52.2	14.9	37.3	14.9	7.5												171.6
85.55				67.6	40.5	27.0	13.5	27.0												175.6
85.60		24.7	24.7	24.7	24.7	24.7	49.4		24.7											197.6
87.35	122.7	49.1	36.8	15.4	6.2	12.3	6.1													248.6
87.40	67.3	33.7	12.2	6.2	3.1						3.1									125.6
87.45						9.6				9.6										19.2
87.50			35.7																	35.7
87.55			10.6	52.8	52.8	31.7	10.6		10.6	42.3			10.6	10.6						232.6
90.28	25.3	6.3	12.6	6.3			25.2		12.6		6.3									94.6
90.30	5.1	35.6	55.9	71.1	40.6	106.7	50.8	10.2												376.0
90.33	40.9	141.4	49.2	38.9	65.6	92.2	36.8	6.1												471.1
90.37	31.8	51.7	12.0	12.0	23.9	19.9	14.0	8.0	4.0											177.3
90.41	72.8	30.5	28.2	9.4	11.7	14.0	14.1	2.4												183.1
90.45	28.5	9.5	7.2	2.4	7.2	4.8	2.4	2.4	4.8											69.2
90.50					4.9			4.9												9.8
93.27	215.6	19.0	19.0	19.0	31.7	19.0	19.0													342.3
93.30	192.4	50.6	10.2		10.1	15.2	5.1	10.2	5.1											298.9
93.35	184.1	92.0	11.9	3.0	8.9	5.9	5.9	3.0												314.7

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5405 (cont'd):																				
117.42						3.8														3.8
117.47		2.4	4.8	9.6	4.8	2.4		2.4												26.4
117.50			7.5	5.0	17.4	5.0														34.9
117.55					2.1															2.1
117.60		2.4	4.9																	7.3
120.25		2.1	4.1	12.3	12.3	12.4	18.5	28.9	16.5	2.1										109.2
120.27		45.9	43.1	169.4	324.3	152.1	146.3	97.5	57.4	25.9			2.9							1064.8
120.30		4.5	80.2	254.2	530.7	214.0	174.0	102.5	35.7	22.3			4.5							1422.6
120.32		44.1	85.5	51.8	15.6	2.6	10.4													210.0
120.35	7.3	191.2	367.8	128.2	31.4	9.7														735.6
120.37	2.0		11.7	11.8	5.9	2.0	2.0		2.0											37.4
120.42								3.3												3.3
120.45								5.9												5.9
120.47							3.2													3.2
120.50		3.9	15.6	27.5				3.9	3.9											54.8
120.55	5.9	56.2	38.5	26.6	59.2	26.6	6.0						3.0							222.0
120.70			3.2	3.2	15.9	9.5		3.2												35.0
120.80		3.5	28.3	99.1	219.5	74.3	7.1	3.5	7.1											442.4
120.90									3.5											3.5
123.37						3.5	10.5	17.5	24.5		10.5									66.5
123.40				3.4	23.8	37.5	40.9	34.1	10.2	3.4	6.8	10.2	6.8	6.8						183.9
123.42						3.2		3.2	3.2		3.2				3.2					16.0
123.45					2.6	5.3						2.6					2.6			13.1
123.47					6.6	16.4	9.9										3.3			36.2
123.50						18.9	88.2	163.8	50.4	6.3	12.6			12.6	18.9	12.6				384.3
123.55					6.4	6.4	68.0	132.9	55.1	9.7	3.2				3.2					284.9
123.60			14.4	34.5	25.9	11.4	37.4	48.8	37.4	2.9	5.8									218.5
127.34			3.0	71.1	94.7	103.6	100.6	53.3	3.0	3.0	17.8	3.0	5.9	6.0		8.9				473.9
127.37			5.7	20.0	51.5	42.9	31.5	8.6	11.5	8.6	5.7	14.3	5.7	5.7	5.8	14.3	11.5			243.3
127.40				11.8	17.6	11.7			2.9											44.0
127.42			6.0	3.0	12.1	6.0		3.0												30.1
127.60						6.6														6.6
130.30	1.8					3.5														5.3
130.35						3.3				3.3										6.6
130.40				5.4	2.7		2.7													10.8
130.50								9.0	6.0	3.0						3.0				21.0
130.55						3.0	3.0	6.0	3.0											15.0
130.60						17.1	10.3	3.4												30.8
133.25	60.6	9.3		2.3				2.3	7.0											81.5

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5405 (cont'd):																				
87.50				1.9	1.9		1.9													5.7
90.28	77.7	41.0	19.4	13.0	6.5	10.8	8.7	13.0	15.1	23.7	2.2	6.5	2.2							239.8
90.30	2.7	16.0		40.0	64.0	45.4	8.0	24.1	10.7	2.7	2.7									216.3
90.33	2.3	4.6	2.3	2.3	4.6	4.6														20.7
90.37	20.3	5.8		2.9	2.9				2.9											34.8
90.41		38.8	12.9	13.0		6.5	38.7	19.4	6.5											135.8
90.60		6.1	6.1	12.2					6.1											30.5
93.27	856.8	149.6	13.6	6.8	6.8	13.6		10.2	23.8	6.8										1088.0
93.35	2.6	2.6		2.6	2.6	15.7														26.1
93.40	7.4	9.8	7.4		5.0				2.5	2.5	2.5									37.1
93.50	2.6	2.6	15.4																	20.6
93.55		2.6		2.6																5.2
93.60									2.6											2.6
93.70						2.0														2.0
97.30	7.8	2.6	10.4	2.6	2.6	2.6	5.2													33.8
97.32	36.0	21.6	2.4	2.4	21.6			2.4												86.4
97.36	88.3	32.7	7.5	10.1	25.2	2.5	2.5			2.5										171.3
97.45		5.2																		5.2
97.70							3.2													3.2
100.29					14.5	14.5	8.7	11.6	23.2	2.9			2.9	2.9	2.9	2.9				87.0
100.30			35.1	26.3	37.9	32.2	26.3	8.7	14.6	29.2		8.7		2.9						221.9
100.35					5.2	7.8		2.6	13.0	5.2	5.2	7.8		2.6						49.4
100.40					3.0			3.0	3.0	3.0										12.0
100.90							3.4													3.4
103.30						1.2	1.2													2.4
103.35				5.0			5.0	2.5												12.5
103.40				15.0	3.0		9.0	9.0		6.0										42.0
107.32	5.9	47.2	106.2	218.3	236.0	283.2	165.2	106.2	47.2	29.5	29.5	11.8	5.9							1292.1
107.35			13.8	38.5	30.3	8.3	11.0	19.2		5.5			2.8		2.8					132.2
107.40						2.6		2.6		5.2	2.6	2.6								15.6
110.33	109.5	157.8	6.4	6.4		3.2														283.3
110.35	6.2	6.2																		12.4
110.70	3.0																			3.0
113.35	16.3	28.6	24.4	28.6	12.2	2.0		2.0												114.1
117.26		52.4	41.9	47.2	57.7	78.6	115.3	83.8	36.6	5.2										518.7
117.28		32.3	69.3	50.9	55.5	23.1	18.4	13.8	23.1	9.2	9.2									304.8
117.30	2.4	14.0	32.8	42.3	21.2	28.2	4.7	2.4	2.4											150.4
117.32	2.8	11.2	22.3	27.8	13.9	5.6	2.8	2.8												89.2
117.35		27.2	21.8	10.8																59.8
117.37	6.3	15.7	3.2																	25.2

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5404 (cont'd):																				
123.50	136.5	57.5	10.8	7.2																212.0
123.55	100.2	297.1	28.7		7.2	7.2	3.6													444.0
123.60					2.8	2.8														5.6
127.34	11.2	28.1	106.8	325.9	505.8	410.2	264.2	78.7	56.2	5.6	5.6									1798.3
127.37	52.3	221.1	912.6	410.0	297.4	233.2	221.1	92.4	40.2	40.2	12.0	12.1			4.0	4.0				2552.6
127.40	22.3	160.0	111.6	137.7	152.6	107.8	104.2	59.5	22.3	18.6	3.7		3.7							904.0
127.42	33.7	63.2	21.0	42.1	21.0	37.9	4.2	16.8				4.2	4.2		4.2				4.2	256.7
127.45	78.4	177.3	170.5	126.1	75.0	27.2	10.2	3.4	13.6	6.8			3.4							691.9
127.47	276.2	315.3	48.7	19.6	3.2	16.3	6.4	3.2												688.9
127.50	87.4	375.0	14.1	2.8																479.3
127.55					14.3	14.3	9.6	4.8												43.0
127.60		27.1	64.2	77.8	33.8	37.1	10.2	10.2	3.4											263.8
130.30	25.5	51.0	121.2	242.5	338.1	242.4	146.8	76.5	25.5	19.2		6.4	6.4							1301.5
130.35	22.6	49.0	101.8	98.0	90.5	33.9	15.1	3.8			3.8									418.5
130.40		16.9	14.0	28.1	22.4	16.8	11.2													109.4
130.45		126.4	139.1	82.1	37.9	6.4														391.9
130.50	6.1	238.7	232.6	76.5	30.6	6.2		3.1												593.8
130.55	3.5	3.5	3.5																	10.5
133.25	39.2	106.4	5.6		11.2	5.6	5.6	11.2	5.6		5.6			5.6						201.6
133.30			2.7	8.1	32.2	45.5	26.8	13.4												128.7
133.35	3.0	6.0	9.0	6.0	3.0	6.0	9.0			3.0	6.0		3.0							54.0
133.40		3.0	6.0																	9.0
133.50	2.9																			2.9
137.23				6.0		6.0	66.5	30.2	48.3	36.2	18.1	6.0	6.0							223.3
137.30	3.5	7.0		27.8	31.4	80.0	55.6	31.3	14.0	10.5			10.4	10.5	10.5	13.9				306.4
137.35				28.3	21.2	17.7	7.0	3.5	3.5		3.5	3.5				3.5				91.7
137.40				3.5																3.5
Total	2805.4	3999.0	3707.8	4359.1	4926.7	4234.1	3462.9	2130.4	1449.9	861.5	409.1	149.5	143.2	52.2	80.2	35.2	4.3		33.5	32854.8
Cruise 5405:																				
83.40			9.1	24.3	18.2		6.1													57.7
83.55				22.8																22.8
85.39			1.6	1.6	4.9															8.1
85.45					5.9	5.9														11.8
85.50					17.7	8.8		26.5	8.8											61.8
85.60				5.8																5.8
87.35			4.3	4.3		4.3	4.3													17.2
87.45					12.8	12.8	12.8	25.6												64.0

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5404 (cont'd:																				
110.35	35.2						6.4	12.8		3.2										57.6
110.40	6.3					3.1														9.4
110.55						3.0		6.0												9.0
110.60			3.4		6.8	6.8		3.4												20.4
113.30		4.0	11.9	4.0			4.0													23.9
113.32	84.9	65.7	54.8	10.9					2.7											219.0
113.35	121.9	19.4																		141.3
113.37	10.0	23.4																		33.4
113.40	7.0																			7.0
113.50											2.3									2.3
113.55								3.2	3.2	6.3										12.7
117.26	2.9	2.9	5.7	14.3	42.9	31.5	31.4	20.0	8.6	11.4				2.9						174.5
117.28	13.5	2.7	8.1		2.7	2.7	2.7													32.4
117.30	126.9	106.2	20.8	2.6	2.6		2.6													261.7
117.32	240.9	82.4	12.7	12.6	6.3															354.9
117.35	9.8	6.6		3.3	6.6	3.3	9.9	6.6	3.3											49.4
117.37	89.0	8.3			8.3	2.8	2.8													111.2
117.40	467.5	311.7			7.4															786.6
117.42	2.8	8.4																		11.2
117.45	2.7	2.7	2.7	2.7																10.8
117.50				2.8		2.8		5.6												11.2
117.55		3.1				3.1														6.2
117.60																			3.6	3.6
117.70										3.0										3.0
120.25			2.6	68.1	107.4	83.8	39.3	41.9	18.4	15.7	15.7	5.2	2.6						7.9	408.6
120.27		3.3	6.6	36.4	89.4	79.4	53.0	33.1	3.3	6.6	3.3									314.4
120.30	21.7			10.8	10.8	43.4	32.5	32.5	32.5	10.8										195.0
120.32	21.8	8.1			10.8	13.6	19.0	8.1	2.7											84.1
120.35	11.6			2.9	5.8	2.9														23.2
120.37		3.1																		3.1
120.40	2.4	7.1		4.7	4.8	7.1	7.1	2.4				4.7								40.3
120.42		7.5	7.4	18.7	26.2	56.1	71.0	93.5	26.2	7.4	7.4	3.7	3.7		3.7					332.5
120.45		11.7	42.8	136.1	97.3	23.4	15.6	7.8	23.3	15.6	11.7	3.9		3.9	3.9					397.0
120.47	3.2	3.2	16.2	35.7	29.1	61.6	55.1	35.7	42.1	19.5		3.2							6.5	311.1
120.50					37.5	37.5	37.5	22.5	7.5				7.5							150.0
120.55				3.0																3.0
120.60				3.3	3.3	9.9		3.3				3.3								23.1
120.70		11.9									3.0									14.9
123.37		6.0	84.6	72.5	42.2	72.4	36.2													313.9
123.40		103.1	493.2	633.0	713.9	728.6	713.9	397.4	441.6	176.7	81.0	22.1	14.7	14.8	7.4					4541.4
123.42	12.6	75.6	88.2	459.9	617.4	340.2	302.4	107.1	63.0	37.8			6.3	6.3	25.2					2142.0
123.45		55.2	186.3	358.8	621.0	655.5	558.9	503.7	317.4	262.2	186.3	62.1	62.1		13.8	13.8				3857.1
123.47	389.8	374.4	96.5	142.8	131.2	77.2	54.1	54.1	19.3	11.6		3.9								1354.9

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																	
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5404:																				
63.52				1.9																1.9
67.50				2.2																2.2
80.51						3.8														3.8
83.40	0.7												0.7							1.4
83.43							4.3								4.3		4.3			12.9
83.48									2.1					2.1						4.2
85.39	10.4									6.2			2.1							18.7
85.40					4.1		4.1			4.1										12.3
85.45				13.0	6.5	6.4	3.2	6.5	9.7	13.0	3.2	3.2	6.4	3.2	3.2					77.5
90.28									4.6											4.6
90.30		8.2																		8.2
90.37						3.0														3.0
90.55									2.8											2.8
93.27	24.5	137.2	240.1	102.9	29.4	29.4	4.9	9.8	29.4											607.6
93.30	35.0	35.0	35.0	40.0	12.5	2.5	12.5	15.0	5.0	7.5	5.0									205.0
93.35	11.6	23.2	14.5	26.1	37.7	14.5	29.0	26.1	8.7	20.3	5.8									217.5
93.40	14.2	8.5	8.5	5.6	5.6	2.8														45.2
93.45		2.9	20.0	11.4	2.9	17.1	2.9			2.9										60.1
93.50	3.1	3.1	3.1																	9.3
93.60											3.3									3.3
97.30	24.6	15.1	7.6	9.5	1.9	3.8		1.9												64.4
97.40	11.7	2.9	2.9		2.9	2.9	2.9	11.6	8.7	2.9	2.9									52.3
97.45							5.8	2.9												8.7
97.50		6.5	6.5																	13.0
100.29			4.4	25.9	41.0	28.1	38.8	6.5	8.6											153.3
100.30			2.7	34.6	69.1	29.2	31.9	5.4	2.7	5.3										180.9
100.35			40.3	184.3	227.6	264.9	190.1	115.2	54.7	11.6	2.9			2.9						1094.5
100.40		5.6	28.3	62.3	56.6	67.9	39.6	31.1	11.3	8.5									11.3	322.5
100.45		2.8		16.6	30.5	16.6	11.0	13.9	16.6		2.8									110.8
100.50				6.0			9.0													15.0
100.55								2.9	2.9											5.8
100.60							3.0													3.0
103.30	2.4									2.4										4.8
103.35					3.2	9.5	9.5	3.2												25.4
107.32	34.5	91.1	3.1	6.2	6.3	9.4	22.0	22.0	12.5	15.7	6.2									229.0
107.35					3.7		3.7	3.7		7.3										18.4
107.40					7.4															7.4
107.45						6.5														6.5
107.50		3.6	21.8	14.6	14.5	3.6														58.1
110.33	43.8	6.0					2.0	10.0	21.9	25.9	8.0	2.0								119.6

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5403 (cont'd):																				
117.35	225.0	153.1	111.4	39.4	4.6	2.3														535.8
117.37	59.7	43.2	4.1	6.2	4.1															117.3
117.40	116.3	13.3																		129.6
117.42	59.0	35.4	2.4	2.4																99.2
117.55	2.7	2.7	8.2	8.2	19.2	11.0	8.2	5.4	2.7	2.7	2.7	2.7								76.4
120.25	18.7	56.1	4.4	5.5	5.5	1.1		2.2												93.5
120.30	137.8	55.2	82.8	51.3	29.5	11.8	9.8	4.0	4.0	5.9									3.9	396.0
120.32	1087.9	93.4	67.4	99.5	67.3	16.8	6.2													1438.5
120.35	319.2	14.0	8.4	12.6	1.4		2.8													358.4
120.37	10.0	2.0		6.0	2.0	4.0														24.0
120.40	9.8	7.3	4.8	19.6	26.9	9.8	2.4													80.6
120.42	18.0	18.0	36.0	40.0	38.0	28.0	10.0	2.0							2.0					192.0
120.45	348.4	514.8	88.4	31.2	10.4	5.2														998.4
120.47	587.9	519.7	71.0	25.5	8.5		5.6													1218.2
120.50	100.3	78.6	16.3	2.7	8.1	2.7														208.7
120.55		7.6	20.2	10.1	7.6	10.1	5.1	10.1	2.5											73.3
120.60		15.8	97.2	11.3	11.3	11.3	6.8	2.3	4.6											160.6
120.70			7.3		2.4	2.4	4.9	4.8			2.4									24.2
120.80			2.9		2.9		2.9	2.9												11.6
120.90							1.7					1.7								3.4
123.37	2.5	27.2	12.3	5.0				2.5												49.5
123.40	572.7	45.6	122.6	51.2	14.2		2.8			2.8										811.9
123.42	16.4								2.7											19.1
123.45	12.8																			12.8
123.47	33.6	2.8																		36.4
123.50		6.0	6.0		6.0		3.0													21.0
123.55		6.7	6.7	47.1	13.5	2.2	2.2	2.2						2.2		2.2				85.0
123.60		34.7	2.3																	37.0
127.34	15.0	50.8	23.9	83.7	313.9	98.7	18.0	3.0	3.0				9.0	3.0						622.0
127.37	8.5	25.5	22.7	79.5	124.9	34.1		2.8			2.8		2.8						17.0	320.6
127.40	2.7		10.7	39.9	37.3	5.4														96.0
127.42		2.7	5.3	5.4																13.4
127.45			5.8																	5.8
130.30				1.9																1.9
130.35	2956.5	863.6	20.4	10.2																3850.7
130.40	252.7	130.6	34.1	5.7		2.8														425.9
130.45	5.0	7.5	27.4	10.0	2.5				2.5											54.9
130.60										2.3		2.3	2.3							6.9
133.25	1503.4	362.9	35.6	87.5	64.8	32.4	32.4	16.2	6.5			3.2							16.2	2161.1
133.30	70.4	20.5	18.1	13.6	15.9	4.5	6.8	4.5												154.3
137.23	2.2	4.5	109.2	283.3	243.1	49.1	15.7	15.7	6.7	11.1	8.9	11.2	17.8	11.2	31.3	11.1				832.1
137.30	19.4	27.7	41.5	8.3	2.8	8.3	11.1	22.1	36.0	33.4	19.4	2.8		2.8					2.8	238.4
Total	11761.6	6099.1	3725.7	4053.1	3504.1	2292.4	1468.4	618.7	186.8	177.6	129.8	46.7	64.2	49.3	59.7	21.1	1.2		50.4	34309.9

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5403 (cont'd):																				
85.39	145.1	335.6	295.1	440.3	283.3	230.9	114.3	42.8		9.5										1896.9
85.40	338.0	445.4	332.8	286.7	322.5	174.1	97.2	46.0	5.1	5.1										2052.9
85.45	77.1	93.6	138.1	231.7	203.6	142.8	133.4	37.4	16.4	2.3	7.0	2.3								1085.7
85.50	225.8	69.8	89.6	53.1	33.2	66.4	63.0	33.2	3.3	3.3					3.3					644.0
87.35	335.3	225.0	303.7	495.0	621.0	699.7	414.0	175.5	15.8	47.2	31.5		15.8							3379.5
87.40	369.2	296.4	197.6	218.4	239.2	114.4	83.2	10.4						5.2						1534.0
87.45	223.7	149.2	149.3	318.7	149.1	142.4	67.8	13.6	20.4			6.8		6.8						1247.8
87.50			2.9	5.7		2.9														11.5
87.55					2.9															2.9
90.28	128.0	89.6	102.4	112.6	35.8	20.5	12.8	17.9	2.6	2.6										524.8
90.30	50.4	84.0	224.0	106.4	78.4	50.4	33.6		5.6											632.8
90.37	34.4	17.2		5.7																57.3
90.45	69.2	79.8	21.3	21.3	10.6	5.3	15.9	5.3												228.7
90.55							5.9				5.9									11.8
90.60							4.6			9.2										13.8
93.27	481.1	158.7	109.1	89.2	39.7		5.0													882.8
93.30	3.1		6.2	3.1			3.1													15.5
93.40	10.4	47.0	73.1	78.4	57.4	75.7	39.1	7.8												388.9
97.30	37.5	22.5	7.5	20.0	7.5	7.5	5.0	10.0	7.5											125.0
97.32	150.9	194.0	16.9	9.2	12.3	7.7	9.3	4.6	3.0	4.6										412.5
97.40				2.5				2.5												5.0
97.50									2.9											2.9
100.29	1.0	2.0	4.4	10.3	13.3	14.7	9.3	2.0	1.0		1.0	0.5								59.5
100.30	24.8	14.5	10.3	10.3	10.3	12.4	2.1	2.1	2.1	2.1										91.0
100.35	8.3	2.8	13.8	5.5	2.8	2.8														36.0
100.60											5.0									5.0
103.30	16.0	9.1	13.6	9.2	2.3	4.6	6.9													61.7
107.32	23.3	34.1	12.6	7.2	1.8		3.6													82.6
107.35	8.3	10.0					1.7													20.0
107.40			20.0																	20.0
110.33		2.2	2.2	2.2																6.6
110.35	10.8	5.4	2.7	2.7	2.7		2.7													27.0
110.40	30.0		4.0																	34.0
113.30				4.9	4.9	9.8	4.9	14.6	4.9		9.8	4.9	9.8	9.8	4.9					83.2
113.32	5.4	64.3	64.4	32.1	16.1	5.4	5.4	21.4	5.4	16.1	21.4				5.4					262.8
113.35	1.4	4.2																	1.4	7.0
117.26	4.8	12.1	4.8	1.2	3.6	3.6	7.2	8.4	10.8	2.4			1.2				1.2			61.3
117.28	1.3		8.0	1.3	1.3	1.3														13.2
117.30	102.9	63.0	23.1	12.6	10.5	2.1	2.1													216.3
117.32	21.7	3.1	3.1																3.1	31.0

Station	Midpoint of Size Class (in mm.)																	
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5402 (cont'd):																				
120.70		24.7	208.3	145.2	60.3	16.4	5.4	2.7		2.7	2.7									468.4
120.80			24.5	15.3	3.1	3.1	6.1						3.1							55.2
123.37	55.0	27.5	91.6	55.0	54.9	45.8	45.8	64.1	18.3											458.0
123.40	48.0	19.2	38.4	48.0	67.2	57.6	76.8	57.6	38.4	57.6	38.4	28.8	9.6	19.2		9.6				614.4
123.42	3.1	86.2	317.2	77.0	92.4	129.4	120.1	77.0	24.7	27.7	18.5	9.3	12.4	6.2						1001.2
123.45	36.4	109.1	254.5	166.6	160.6	93.9	181.8	72.7	60.6	27.3	33.6	12.0								1239.1
123.50					6.5	6.5	41.3	71.6	36.9	17.4	6.5	2.2								188.9
127.34	126.1	19.7	3.9	7.8		3.9			3.9											165.3
127.40			3.5	3.5	7.0	3.5														17.5
127.45										3.1										3.1
127.50			2.4	14.5	9.6			2.4	4.8											33.7
130.30		8.4	14.0	5.6	22.4	16.8	8.4	8.4	5.6	2.8	2.8		2.8							98.0
130.35	6.3	6.3	12.6			6.3														31.5
130.40			3.0	3.0	3.0	3.0														12.0
130.55									2.9											2.9
130.60												1.9								1.9
133.25	1603.8	53.8	40.3	62.7	67.2	58.3	94.1	31.3	9.0											2020.5
133.30			1.2	5.8	5.8	19.8	7.0	5.9	1.2										18.0	74.8
133.35	17.3	19.8	14.9	9.8	2.5	2.5														66.8
133.40			9.6	24.1	7.2	4.8														45.7
137.23		3.9	41.1	21.6	4.0															70.6
137.30	49.3	21.9	254.8	317.8	246.6	175.3	57.5	24.6	11.0	5.5	5.4									1169.7
Total	5636.6	4793.0	4663.3	4295.5	4181.0	3047.0	2197.8	1380.9	964.7	593.2	465.2	261.8	134.3	76.7	10.5	9.6		2.5	36.5	32711.8
Cruise 5403:																				
77.50						5.7	5.7													11.4
80.51				4.8	32.9	21.1	32.8	2.4		2.4										96.4
80.55							5.5	5.5	5.5				5.5							22.0
80.70											5.4									5.4
82.47		18.6	65.3	18.6						9.3										111.8
83.40	157.0	147.9	99.7	84.6	51.3	21.2	21.1	3.0											6.0	591.8
83.43	9.9	66.6	71.7	103.8	62.0	7.4	5.0	4.9												331.3
83.48	64.6	75.3	40.3	51.1	24.3	13.5	16.2	5.4												290.7
83.51	16.4	6.6	39.3	68.9	68.9	72.1	65.6	39.3	3.3	3.3	6.6	3.3		3.3						396.9
83.55			15.0	20.0	10.0		5.0					5.0		5.0	10.0	5.0				75.0
83.60															2.8	2.8				5.6

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5402 (cont'd):																				
90.60											2.5									2.5
93.27	260.4	211.1	143.5	108.6	63.5	39.0	24.6	16.4	4.1											871.2
93.30	237.7	223.6	70.8	8.5	17.0	2.8	8.5	2.8												571.7
93.40	159.0	98.0	10.6	2.6			2.6		2.6											275.4
93.50							10.3													10.3
93.60					15.2	17.8	35.5	53.3	33.0	7.6	5.0	2.5	5.0							174.9
97.30	200.9	529.0	168.7	113.2	85.4	50.8	48.5	50.8	34.7	9.2	4.6									1295.8
97.32	50.2	62.7	40.2	42.7	17.6	27.6	32.7	15.0	12.5	2.5										303.7
97.40		11.2	28.1	33.7	16.8	5.6	8.4	8.4	2.8											115.0
97.50			2.8	2.8					5.6											11.2
100.29	85.8	128.7	198.0	165.0	201.3	102.3	82.5	79.2	26.4	16.5	9.9									1095.6
100.30	2.6	15.8	13.2	58.1	44.9	42.3	29.1	36.9	18.5	13.2	5.3	2.6								282.5
100.40	7.8	15.8	28.8	15.7	7.8															75.9
103.30	162.1	254.2	360.0	272.2	225.0	54.0	13.6	11.2												1352.3
103.50										3.1										3.1
107.32	92.1	440.8	348.7	209.3	178.5	47.5	44.6													1361.5
107.35		2.6	2.6																	5.2
107.40		7.0	10.5	3.5	3.5		3.5													28.0
110.33	44.2	44.2	91.8	125.8	119.0	102.0	40.8	23.8	6.8		3.4									601.8
110.35		4.5		44.8	26.9	13.4	13.5	4.5	4.5	4.5										116.6
110.45	18.6																			18.6
113.30		25.2	36.2	53.0	33.5	27.9	14.0	2.8	5.6	2.8										201.0
113.35	167.7	262.0	52.4	31.4		21.0														534.5
113.40	43.5	5.8																		49.3
117.30	56.8	54.0	8.5																	119.3
117.35	50.0	44.5	11.1		11.1															116.7
117.40	16.8	11.2	11.2	2.8	2.8															44.8
117.45	44.3	19.4	24.9	19.4	8.3	11.1	2.8	2.8												133.0
117.50	141.2	105.9	19.2	38.5	25.6	16.0	19.2	6.4												372.0
120.25	88.5	39.1	4.1	4.2		2.1														138.0
120.30		6.9	4.6		2.3		4.6													18.4
120.35		2.0	8.2	6.1	10.2	6.1						2.0								34.6
120.37	4.0	12.0	8.0			4.0														28.0
120.40	21.7	67.7	123.4	167.0	261.3	360.6	254.1	106.4	31.5	9.7	7.2	7.3							4.8	1422.7
120.42	6.2	37.5	74.9	168.5	137.3	224.6	49.9	6.2	12.4											717.5
120.45			23.4	128.9	187.5	82.0		11.7												433.5
120.50	3.1	30.9	46.3	27.8	15.5		3.1			3.1										129.8
120.55		136.3	169.7	99.9	54.6	24.2	15.2	9.1	9.1		3.0	3.0							3.0	527.1
120.60		23.7	2.4				2.4	2.4												30.9

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5401 (cont'd):																				
130.60															3.5					3.5
133.25	3296.1	1335.6	1242.3	219.2	249.5	15.1	22.7	10.1	5.0											6395.6
133.30	763.9	169.0	27.1	10.2	6.8	3.4														980.4
137.23			5.7	96.6	454.4	383.4	164.7	62.4	22.7	5.6	2.8		2.8							1201.1
137.30		14.8	3.0	29.7	210.8	139.6	32.6	17.8				3.0								451.3
140.30	5.8	2.9	8.7						2.9											20.3
147.25	6.2																			6.2
150.19	2.8																			2.8
Total	6429.7	4529.5	4182.8	2594.9	2926.8	1693.1	1007.6	613.1	331.0	196.3	121.7	101.3	66.2	16.6	20.0	6.5	1.5	3.9	16.0	24858.5
Cruise 5402:																				
80.51		39.6	32.3	44.7	64.5	81.8	89.3	119.1	148.8	208.4	173.6	114.1	54.5	19.8	5.0			2.5		1198.0
80.55			2.8	34.0	22.7	53.7	22.7	14.2	36.8	11.4	8.5	2.8		5.6	2.8					218.0
80.60				6.6			3.3	3.3	3.3	3.3	3.3	3.3		3.3						29.7
82.47		8.9	17.8	20.8	20.8	26.7	20.8		11.9	3.0										130.7
83.40	39.3	22.2	20.5	24.0	32.5	15.4	6.8			1.7										162.4
83.43	2.8	2.8	2.8	11.4	8.5	11.3	2.8	8.5		5.6										56.5
83.48	5.4	2.7	2.7	19.1	24.7	32.8	46.5	11.0	38.4	19.2	19.2	16.4							2.7	240.8
83.51	2.8	36.8	39.6	33.9	17.0	17.0	5.7	8.5	17.0	8.5	2.8									189.6
83.55				17.4	22.3	27.3	12.4	5.0	7.4											91.8
85.39	108.0	30.0	24.0	24.0	48.0	42.0	54.0	66.0	84.0	6.0		6.0								492.0
85.40	18.6	5.2	26.5	42.4	47.8	29.1	15.9	23.8	7.9											217.2
85.45			2.5	34.7	109.1	158.7	94.2	47.1	57.1	74.4	57.1	29.8	19.9	2.5	2.5					689.6
85.50		3.0	3.0	3.0	23.7	14.8	5.9													53.4
85.55		6.8	10.2	6.8	3.4	6.8	10.2	30.6	51.0	20.4	13.6		3.4							163.2
85.60		3.3			10.0	6.6	6.6	3.3		10.0	3.3	6.7	3.3							53.1
87.35	344.0	155.6	111.9	169.3	221.1	87.3	27.2	13.7												1130.1
87.40	306.4	115.6	219.6	323.7	404.6	242.8	121.4	57.8	11.6											1803.5
87.45	78.9	36.8	15.8	18.4	26.3	7.9	10.6	2.6	2.6											199.9
87.50	60.3	160.7	195.2	183.7	169.4	48.8	20.1	5.7	2.9											846.8
87.60				2.7																2.7
90.28	315.0	310.0	145.0	120.0	115.0	105.0	75.0	40.0	45.0	5.0	5.0	5.0								1285.0
90.30	109.2	322.2	103.7	120.1	152.9	76.4	103.7	43.7	5.5											1037.4
90.37	250.5	136.4	101.7	24.8	19.8	5.0	9.9	2.5												550.6
90.45	84.9	60.6	103.1	72.7	24.2	18.2	18.2	6.1	6.1			6.1								400.2
90.55							6.3													6.3

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5401 (cont'd):																				
100.50	12.0	1.5	1.5	1.5	15.0	7.5	7.5	9.0	3.0	1.5										60.0
103.30	32.3	23.5	35.3	2.9	5.8	14.7	2.9	2.9				2.9								123.2
103.35	87.7	132.8	218.0	116.2	87.7	45.0	35.5	4.8	7.1											734.8
103.40	9.6	12.0	4.8	16.8	16.8	2.4														62.4
103.60							1.9													1.9
107.32		2.6	2.6		2.6	5.2	2.6													15.6
107.35	2.9			8.7																11.6
107.40				3.5	7.1															10.6
107.60				2.0	10.1	2.0	4.1	4.1	2.0											24.3
110.33	43.4	9.8	5.9	5.9	15.7	4.0	2.0	3.9	2.0											92.6
110.35	1.9																			1.9
110.40	2.5																			2.5
110.60									2.1											2.1
110.70						1.9	1.9		1.9	1.9										7.6
113.30		2.7		8.2	2.7	8.2	5.4													27.2
113.35	101.0	50.5	5.9	11.8	23.7	14.8	14.8	8.9		8.9										240.3
113.40	14.8	12.3	5.0	12.3		2.5														46.9
117.26			19.6	41.7	66.1	44.2	27.0	4.9	2.4	2.4										208.3
117.30				5.8	2.9	5.8	2.9													17.4
117.35	18.4	7.9	2.6	13.2	2.6	2.6														47.3
120.25				4.7																4.7
120.30			16.0	31.8	29.1	15.9														92.8
120.35		10.6	31.7	42.2	21.1	15.9	5.3													126.8
120.45	10.7	50.9	134.0	67.0	16.1	13.4	13.4													305.5
120.50	21.2	29.2	21.2	26.5	10.6	5.2	2.6													116.5
120.60			2.9	5.8	8.8	8.8														26.3
120.70					15.1	3.0	3.0	3.0		3.0										27.1
120.80	2.6		2.6	53.6	122.4	68.9	20.4	7.7	5.2											283.4
123.37		2.4	56.4	16.5	56.4	37.6	33.0	18.8												221.1
123.40		15.6	168.4	137.2	43.7	31.2	18.8	15.6												430.5
123.50													2.7							2.7
127.34	3.0	9.0																		12.0
127.40	6.1		6.1	12.1	12.2	6.1		9.1	6.1	6.0										63.8
127.50			13.5	134.8	165.1	53.9	57.3	70.8	87.6	30.3	16.9	13.5		3.4						647.1
130.30	42.1	6.0	33.1	9.0	18.0	3.0														111.2
130.35	11.1	144.0	55.4	11.1																221.6

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5408 (cont'd):																				
120.30	34.6	17.3	2.5	7.4																61.8
120.35					2.6															2.6
120.45					3.7	3.7	3.7													11.1
123.37					2.7															2.7
123.40					6.7															6.7
123.45					6.1						3.0									9.1
123.50					10.0	30.0	46.7	13.4												100.1
127.40							2.8													2.8
127.45		3.0			3.0	5.9	3.0	3.0		3.0										20.9
127.50	8.4	5.6	8.4	8.3	2.8	8.4	11.1	2.8	5.6											61.4
130.30				3.0			3.0													6.0
130.40												4.7								4.7
133.25								2.6		2.6										5.2
137.23										2.8										2.8
137.30										2.7										2.7
Total	208.3	290.6	233.3	251.6	279.3	174.8	171.9	87.1	50.1	50.4	27.6	18.1		22.0		10.2				1875.3
Cruise 5410:																				
77.50			5.7	5.7					5.7											17.1
80.51		7.5	12.5	12.5	2.5		5.0	2.5	2.5											45.0
80.60			3.3	16.5	9.9	6.6		3.3												39.6
80.80					6.3															6.3
82.47		3.1	3.1	3.1		6.2			3.1											18.6
83.40	2.3	6.9	2.3	2.3	6.9	2.3	4.6	4.6				2.3								34.5
83.43	2.6	5.1	10.3	12.8	12.8	12.8	20.5													76.9
83.48	2.7	5.4	5.4																	13.5
83.60					2.9		2.9		2.9											8.7
85.39					2.9			2.9												5.8
85.40	9.0																			9.0
85.55									3.8											3.8
87.50							2.9		2.9			2.9	2.9							11.6
87.60					3.0															3.0
90.28		5.3						2.6												7.9
90.30			3.1	12.5	6.2		3.1			3.1										28.0
90.37					8.6	2.9														11.5
90.55								2.8												2.8
93.27			2.9			2.9														5.8

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5410 (cont'd):																				
93.30		5.9	8.9	6.0	6.0			3.0		6.0										35.8
93.40						3.0			3.0											6.0
97.30		15.9	54.0	3.2	6.4	3.2	6.4													89.1
97.32	122.4	26.0	7.4																	155.8
97.45		5.7	2.9																	8.6
100.29				2.7	2.7	5.3	5.3	8.0	2.7	5.4		2.7								34.8
100.30			6.3	25.2	49.9	22.0	9.4	15.7	15.7		9.4	18.8	12.6		6.2	3.1				194.3
100.40			3.0		15.2	6.0	9.1	9.1	9.1	3.0					3.0	3.0				60.5
100.45				3.2	3.2															6.4
103.30			5.6					5.6	8.4	8.3	8.4	5.6		2.8						44.7
103.35		4.6	9.2	27.8	30.0	6.9		4.6	2.3											85.4
107.32									6.4	9.6	3.2	6.4								25.6
107.35								11.9					5.9							17.8
110.33						7.3	7.3	3.6	1.8											20.0
110.35					7.8				5.2						2.6					15.6
110.40				7.0			3.5		3.5						3.5					17.5
113.40			3.3		6.6															9.9
117.26								5.2												5.2
117.30					1.8	11.1		3.7	3.7			3.7	1.8							25.8
117.35				3.0			3.0													6.0
120.25						1.2		1.2												2.4
120.30								2.6												2.6
120.35				1.0																1.0
120.45				5.8																5.8
120.50										3.9		3.9	3.9							11.7
120.60								3.7												3.7
127.50					3.2	3.2														6.4
Total	139.0	91.4	149.2	150.3	194.8	102.9	83.0	96.6	82.7	39.3	21.0	46.3	27.1	2.8	15.3	6.1				1247.8
Cruise 5412:																				
80.51	93.8	50.9	10.8	5.4	16.0	2.7													2.7	182.3
80.55					3.4															3.4
80.70						2.6														2.6
82.47	9.7	19.4	16.2	19.4	6.5	9.7	3.2		6.5											90.6
83.40	244.7	217.2	52.0	59.7	23.0	4.6	1.5													602.7
83.43	2.7	5.4	10.8	8.1	2.7	10.8	13.5	13.5	5.4											72.9
83.48		17.8	14.2	7.2	3.6		3.6													46.4
83.51		3.2										3.2								6.4
85.39	857.6	461.3	186.8	124.5	59.4	8.5	2.8	5.7			2.8									1709.4
85.40	128.0	276.5	69.8	98.9	34.9	8.7	8.7	8.7	2.9										8.7	645.8

Table IV (cont'd)
Record of Anchovy Larvae, 1954

Station	Midpoint of Size Class (in mm.)																		
	2.50	3.75	4.75	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.75	17.25	19.25	21.25	23.25 & over	Dis.	Total
Cruise 5412 (cont'd):																				
85.45		3.1	3.1	3.1																9.3
85.50							3.2												3.2	6.4
87.35	14.1	34.0		8.5	2.8															59.4
87.40	3.1							6.3												9.4
87.45	6.2							6.2												12.4
87.50	10.3	5.2																		15.5
90.28		18.0	20.6	18.0	5.2	2.6	2.6		2.6											69.6
90.30		2.9	8.8	20.6	8.8															41.1
90.37				6.6																6.6
90.45				3.5									3.5							7.0
90.60	2.9																			2.9
93.27							6.2		3.1											9.3
93.40			3.2																	3.2
97.30		2.3			2.3		2.3	2.3	2.3											11.5
97.32					3.2			3.2												6.4
97.40							3.1													3.1
100.29	3.0	6.0	11.9	14.8	11.8		8.9			6.0							3.0			65.4
100.30		6.0	14.8	6.0	8.9		3.0	3.0	3.0											44.7
103.35		9.3	3.1		3.1															15.5
103.40		3.1					3.1													6.2
107.32	8.9	11.9																		20.8
107.35	135.6	47.5																		183.1
110.33	2.9	5.7	5.8	2.9		8.6	8.6	2.9	2.9											40.3
110.35						5.6														5.6
113.30		2.4	63.7	33.0	16.6	7.1	2.4													125.2
113.50	6.9	147.9	13.8	17.2	44.7	20.6	6.9	3.4	13.8	3.4										278.6
117.26	4.8																			4.8
117.30		5.5	88.3	60.8	5.5															160.1
117.35			4.7	7.1	2.4		11.8	4.7	7.1	21.3	9.5	2.4		2.4						73.4
117.40		9.6	45.0	12.8	12.8	6.4	12.8	9.6	9.6		3.2									121.8
120.25						3.7														3.7
120.35	6.1	12.2																		18.3
120.40		3.0					3.0	3.0												9.0
120.45								2.4												2.4
127.34					2.3		4.7	2.3												9.3
130.30			4.9	64.2	93.9	118.6	49.4	34.5	9.9											375.4
130.35			14.5	52.2	63.8	55.1	40.6	20.3	8.7	2.9									14.5	272.6
130.40				3.0	6.0		3.0													12.0
133.25			2.3																	2.3
137.23	194.0	84.2	49.4	16.4	5.5	1.8	1.8													353.1
140.30							2.1													2.1
Total	1735.3	1471.5	718.5	673.9	449.1	277.7	212.8	132.0	77.8	33.6	15.5	5.6	3.5	2.4			3.0		29.1	5841.3

Table V
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																		Total
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	
Cruise 5401:																				
130.60			3.5																	3.5
137.30	6.0	5.9	5.9	5.9	3.0															26.7
Total	6.0	5.9	9.4	5.9	3.0															30.2
Cruise 5402:																				
100.70		3.2																		3.2
100.80	2.6	7.8	2.6																	13.0
103.60		16.4	3.3																	19.7
110.60		15.7	34.5	6.3																56.5
113.45					3.6															3.6
113.50			3.4		3.4	3.4														10.2
113.60	45.9	17.2	17.2	5.7		2.9														88.9
133.35				2.5																2.5
Total	48.5	60.3	61.0	14.5	7.0	6.3														197.6
Cruise 5403:																				
97.60		14.0	4.7																	18.7
97.70							6.9													6.9
100.40		2.4																		2.4
100.45									5.3											5.3
100.50	19.4	4.9						4.9												29.2
100.55	3.8	19.2																		23.0
100.60	10.1		10.1																	20.2
100.70	2.2	4.5	2.2	2.2	2.2	11.2	13.5													38.0
100.80	15.4	7.7	10.2	5.1	2.6	5.1	5.1													51.2
100.90	2.3	11.6	9.3		2.3	13.9	18.6	7.0												65.0
103.30		4.6																		4.6
103.35	9.3	37.3	11.6																	58.2
103.40	56.8	85.1	12.9	2.6																157.4
103.45	5.9	11.8	14.8	29.5	8.8		3.0			3.0										76.8
103.50		2.4	2.4			2.4		9.7												16.9
103.60	5.1	5.1				2.6	5.1	2.6												20.5
107.45	2.4	24.0	64.8	9.6																100.8
107.55	3.3	18.3	3.3	5.0	1.7															31.6
107.60		7.1	14.2	11.8																33.1

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																	
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5403 (cont'd):																				
110.40								2.0												2.0
110.45				3.0		3.0														6.0
110.50	3.2		3.2		6.4		3.2													16.0
110.55			6.3		15.8															22.1
110.60		6.1	2.4		1.2															9.7
110.70	8.2	16.4	13.6	5.5	5.5	5.5														54.7
110.80		14.0	21.1	4.7	9.4		2.3													51.5
113.35						1.4		1.4												2.8
113.37		7.6					2.5													10.1
113.40				6.3		6.3														12.6
113.42				2.8		2.8														5.6
113.45						2.8														2.8
113.47					2.8	5.6	2.8													11.2
113.50				2.0	2.0															4.0
113.55				3.4		3.4	3.4													10.2
113.60		3.5	13.8	17.3			3.5													38.1
117.40		1.7																		1.7
117.55				2.7	2.7															5.4
117.60				2.2	11.0	2.2														15.4
Total	147.4	309.3	220.9	115.7	74.4	68.2	69.9	27.6	5.3	3.0										1041.7
Cruise 5404:																				
80.80						2.4														2.4
80.90					2.5															2.5
82.47			2.9																	2.9
83.90									4.5											4.5
87.55										3.1										3.1
87.80			2.6				5.2													7.8
87.90	2.4		7.2				2.4													12.0
90.60		2.3	16.4	4.7																23.4
90.70		38.6	129.7	27.6																195.9
90.80		8.7	26.0	8.7	2.9															46.3
90.90		5.7	11.4	8.6		5.7	2.8	2.8												37.0
93.80		11.9	14.9	11.9	6.0	6.0														50.7
93.90		6.4	9.6		3.2															19.2
97.55	8.9	8.9	14.8																	32.6
97.60	8.9	17.8	3.0	3.0																32.7

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																	Total
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	
Cruise 5404 (cont'd):																				5.8
97.70			5.8																	133.3
97.80	6.2	18.6	43.4	40.3	12.4	6.2	3.1	3.1												95.9
97.90	19.7	8.5	2.8	11.3	11.3	25.4	11.3	5.6												3.0
100.50				3.0																14.5
100.55		2.9	2.9		2.9			5.8												12.0
100.60			3.0	3.0	3.0	3.0														66.7
100.70		5.8	55.1	5.8																3.2
100.80						3.2														96.1
100.90	8.7	23.3	14.6	20.4	5.8	14.6	5.8			2.9										83.2
100.100	17.8	38.6	23.8				3.0													16.3
103.40	9.8	6.5																		73.2
103.45		5.9	32.2	20.5	8.8	2.9	2.9													12.0
103.50	3.0	3.0			3.0			3.0												31.1
103.55			7.8	3.9	11.6		3.9	3.9												73.3
103.60			2.9	11.8	17.6	23.5	8.8	2.9	2.9		2.9									45.0
103.70	3.0		9.0	12.0	15.0	6.0														54.9
103.80		9.7	6.5	25.8		3.2	6.5		3.2											3.7
107.40			3.7																	6.4
107.45									3.2	3.2										50.9
107.50	3.6	18.2	21.8	7.3																41.3
107.55			13.8	24.1	3.4															3.5
107.60				3.5																6.8
107.70				3.4				3.4												29.4
107.80			5.9	5.9	2.9			8.8	5.9											3.0
110.50			3.0																	54.3
110.80	9.6	9.6	9.6		19.1	6.4														8.5
110.90			2.8		5.7															13.3
113.37	10.0		3.3																	3.5
113.40	3.5																			3.6
113.42			3.6																	9.3
113.45	3.1			3.1	3.1															8.7
113.47						2.9	2.9		2.9											3.2
113.55				3.2																7.1
113.70				7.1																59.4
117.40	29.7	29.7																		13.6
117.45		10.9	2.7																	2.9
117.47			2.9																	2.8
117.50			2.8																	3.6
117.60		3.6																		33.3
117.70		18.2	12.1	3.0																

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5404 (cont'd):																				
120.35		2.9																		2.9
120.60	3.3	13.2	19.9	3.3																39.7
120.70	3.0	14.8		3.0																20.8
123.50		3.6										7.2								10.8
123.55	10.7	3.6																		14.3
123.60			5.6	5.6																11.2
127.40		3.7																		3.7
127.42		8.4	8.4																	16.8
127.45	3.4	3.4																		6.8
127.47	3.2	6.5																		9.7
127.50	2.8	8.5	2.8				2.8													16.9
127.60	6.8	20.3	6.8																	33.9
130.35		3.8																		3.8
130.40	2.8	2.8		2.8																8.4
130.45	15.8	19.0																		34.8
130.50	3.1	3.1																		6.2
130.55			7.0																	7.0
133.35	3.0																			3.0
Total	205.8	430.9	586.8	297.6	140.2	111.4	61.4	39.3	22.6	9.2	2.9	7.2								1915.3
Cruise 5405:																				
70.70		2.1																		2.1
73.60		17.2	17.2																	34.4
80.80	2.6	2.6	5.2																	10.4
80.90		4.9																		4.9
83.60	17.0																			17.0
83.80	2.5	17.6	15.1	15.1	7.6															57.9
85.60	28.8	17.3			5.8															51.9
87.50	1.9	15.5	9.7	1.9				1.9	1.9											32.8
87.55	4.3				4.3		4.3		4.3											17.2
87.60	666.0	1524.4	577.2	133.2																2900.8
87.70		3.0	5.9	20.8	5.9	5.9	3.0	3.0	3.0											50.5
87.80		5.7																		5.7
87.90		5.6		2.8															2.8	11.2
90.45			15.6	31.2		5.2														52.0
90.50		2.4	21.7	7.2	4.8	4.8														40.9
90.55			2.6																	2.6

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																	Total
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	
Cruise 5405 (cont'd):																				18.2
90.60		6.1			12.1															17.5
90.80		3.5	3.5	10.5																2.4
93.30			2.4																	2.8
93.45		2.8																		7.8
93.50			2.6		2.6		2.6													13.1
93.55		10.5						2.6												26.3
93.70	2.0	16.2	8.1																	18.4
93.80		4.6	9.2		2.3			2.3												13.4
93.90				9.0		2.2		2.2												2.6
97.30	2.6																			2.4
97.32		2.4																		2.5
97.36				2.5																2.8
97.40										2.8										49.8
97.45		10.5	21.0	10.5	2.6	2.6	2.6													2.7
97.50					2.7															18.0
97.55				2.6	5.1	10.3														6.5
97.70			6.5																	2.9
97.80			2.9																	8.4
97.90	2.8				2.8		2.8													10.4
100.35			5.2	5.2																12.1
100.40	3.0	6.1	3.0						3.4											17.2
100.45		6.9	6.9																	25.5
100.50	6.4	9.5	3.2			3.2	3.2													59.7
100.55		11.2	7.5	26.2	3.7	3.7	3.7	3.7												52.1
100.70		13.9	13.9	20.8				3.5												29.4
100.80	3.3	6.5	13.0	3.3	3.3															40.5
100.90	3.4	13.5	20.2	3.4																16.8
100.100	3.4	6.7	6.7																	5.0
103.35				2.5	2.5															303.0
103.40	93.0	144.0	66.0																	49.6
103.50	4.7	7.1	9.4	9.4	11.8			2.4	2.4	2.4										17.4
103.55		8.7	2.9	5.8																30.4
103.60	5.5	11.0	5.5		2.8		2.8	2.8												34.9
103.70	5.4		18.8		8.0			2.7												30.8
103.80		3.4	13.7	3.4	6.9	3.4					3.2		3.2							6.4
103.90																				8.2
107.35			8.2																	145.6
107.40	5.2	5.2	80.6	54.6																11.7
107.45		2.9	5.9							2.9										69.6
107.50	3.3	23.2	13.3	6.6	3.3		10.0	3.3	6.6											

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5405 (cont'd):																				
107.55		5.7	2.9		5.7		2.9													17.2
107.70	3.5	10.5	31.4	17.4																62.8
107.80		8.1	4.0	8.1	8.1	8.1														36.4
110.35	15.4	9.2	3.1	18.5	3.1				3.1											52.4
110.40					3.0		3.0													6.0
110.50	2.9	5.7																		8.6
110.55	6.7	3.4	3.4	3.4	3.4		6.7													27.0
110.60		3.5	10.5		3.5															17.5
110.70		9.1	15.2	3.0																27.3
110.80				14.2		3.5														17.7
113.35	4.1	4.1	2.0	2.0																12.2
113.37		5.4	8.2	8.2	13.6															35.4
113.40		3.2																		3.2
113.45			5.9																	5.9
113.47		3.2	6.4	9.6	6.4															25.6
113.50		5.7	19.8	11.3			2.8													39.6
113.60			17.8	5.9																23.7
113.70				3.0																3.0
117.35				5.4																5.4
117.37		18.9	3.2																	22.1
117.40		2.1																		2.1
117.42			3.8		3.8															7.6
117.47				4.8																4.8
117.50				24.9	2.5	2.5														29.9
117.55			2.1	4.2																6.3
117.60			4.9	7.3	2.4															14.6
117.70		2.1		4.2	6.3	2.1														14.7
120.37				2.0																2.0
120.55			5.9																	5.9
120.60			19.2																	19.2
120.70		3.2		6.4			3.2													12.8
120.80			3.5	7.1	3.5		3.5													17.6
123.47									6.6											6.6
123.55	3.2	3.2																		6.4
123.60	2.9		5.7																	8.6
127.34		3.0																		3.0
127.42								3.0												3.0
130.50		3.0																		3.0
130.55							3.0													3.0
133.60		3.4																		3.4
Total	905.8	2070.4	1209.2	559.4	166.2	57.5	60.1	33.4	31.3	8.1	3.2		3.2						2.8	5110.6

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5406:																				
60.90			5.9																	5.9
60.100	3.1																			3.1
67.55			12.0	12.0																24.0
70.60			4.8	4.8	4.8															14.4
70.70	3.1	3.1	9.3	6.2	6.2	6.2	6.2													40.3
70.80				3.2																3.2
70.90			13.4	3.4	3.4															20.2
70.100				2.4		2.4														4.8
73.60		11.8	26.6	3.0	5.9	5.9	3.0	5.9												62.1
80.60									11.4											11.4
80.90				3.0																3.0
80.100		13.8	5.5						2.8											22.1
83.48								4.1												4.1
83.60		164.2	273.6	191.5	109.4	27.4	95.8	95.8	13.7	13.7										985.1
83.70		200.6	295.7	52.8	105.6	63.4	73.9	31.7		10.6										834.3
83.80	2.6		12.9	20.6	25.8	7.7	18.1	12.9	7.7	2.6		2.6								113.5
83.90		2.6	10.4	2.6	10.4	31.1	13.0	5.2												75.3
85.60		24.7	49.4	24.7					24.7											123.5
87.60	9.6	28.8	38.4	48.0	9.6	9.6	28.8	38.4	28.8											240.0
87.80	4.7		4.7	23.6	16.1	9.4	14.2	14.2	21.2	2.4										110.5
87.90		9.3	9.3	18.6	9.3															46.5
90.55		20.0	6.7	10.0	3.3	16.7	13.4		10.0	10.0										90.1
90.60	71.8	130.0	71.8	41.0	37.6	13.7	10.3	20.5	13.7	3.4										413.8
90.70			18.8	25.0	37.6	37.6	43.8	25.0												187.8
90.80			87.4	305.8	235.2	124.3	70.6	77.3	33.6	6.7	3.4									944.3
93.45		5.0																		5.0
93.55		103.7	51.8																	155.5
93.60	26.6	79.7	46.5	6.6	6.6		6.6	13.3												185.9
93.70	2.6	7.9			2.6															13.1
97.30		2.7							2.7											5.4
97.32	2.6	5.1		5.1																12.8
97.36		6.6		6.6			13.2													26.4
97.45	5.5	8.2	2.7				2.7													19.1
97.50	2.9	5.8	28.9	20.2	11.6	2.9				2.9										75.2
97.55		2.7	5.4	8.2	5.4	8.2	2.7													32.6
97.60					2.6															2.6
97.70			5.4		2.7		2.7													10.8
97.80		8.2	2.7	5.4																16.3
97.90									7.7											7.7
100.30	8.0	18.7	13.4			5.3														45.4

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5406 (cont'd):																				
100.35	2.9		17.3																	20.2
100.40	3.1	3.1	3.1																	9.3
100.45	39.3	39.3	27.2	3.0	3.0	3.0	3.0													117.8
100.50		2.8	8.5		2.8															14.1
100.55			27.7	2.8	13.8	2.8														47.1
100.60	2.5	2.5	22.3	2.5	2.5	2.5														34.8
100.70	2.9		8.8	2.9				2.9												17.5
100.80			3.0				6.1	6.1												15.2
100.90		7.0			14.0															21.0
103.35			5.8	5.8	2.9	2.9	2.9													20.3
103.40	11.6	17.3		2.9																31.8
103.45	5.9	29.5	11.8	3.0																50.2
103.50		3.1		6.3				3.1												12.5
103.55		21.1	15.1	3.0	15.1	3.0	3.0	3.0												63.3
103.60	5.3	2.7	10.6	2.7			8.0	5.3												34.6
103.70			2.9	2.9				5.8	2.9											14.5
103.80		2.8	2.8	8.4			2.8	2.8												19.6
107.32					5.8															5.8
107.40	6.1	6.1				3.1	9.2	9.2	3.1											36.8
107.50		5.7	20.1	11.5	2.9	2.9														43.1
107.55		3.1	6.1	12.2	6.1		6.1													33.6
107.60	2.4	14.4	19.2	14.4	7.2															57.6
107.70			3.2	3.2	3.2			6.4												16.0
110.35	5.4	5.4	2.7				2.7													16.2
110.40				3.0																3.0
110.45		12.2	94.2	66.9	12.2	3.0	3.0													191.5
110.50			3.0		3.0	6.1														12.1
110.55					2.6	2.6	2.6	2.6												10.4
110.60	2.7	2.7					2.7													8.1
110.70		3.0	15.2		6.1	6.1														30.4
110.80		5.7	5.7	2.8	2.8															17.0
113.40		5.2																		5.2
113.42	5.6	5.6	16.9		2.8															30.9
113.45	2.6	10.2	7.7																	20.5
113.47		15.4	2.6					5.1												23.1
113.50			2.7				5.4													8.1
113.55			6.2					3.1												9.3
113.60		2.8	2.8																	5.6
113.70		2.8		2.8																5.6
117.42					2.9															2.9

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.) 2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5406 (cont'd):																				
117.50			3.0		3.0	3.0														9.0
117.55		3.2	3.2				3.2													9.6
120.55		5.4																		5.4
120.70		6.4																		6.4
120.80			3.0				3.0			3.0										9.0
123.45		3.1																		3.1
123.55		3.0	6.1																	9.1
123.60		8.6																		8.6
127.55				2.9																2.9
130.50			2.9																	2.9
137.40				3.1																3.1
Total	241.4	1124.4	1506.8	1023.3	766.4	412.8	482.7	399.7	184.0	55.3	3.4	2.6								6202.8
Cruise 5407:																				
60.70		10.3			10.3															20.6
60.80			3.0		3.0	3.0		3.0	3.0	3.0										18.0
60.90								2.6												2.6
60.100												2.3								2.3
70.70										2.2					2.2					4.4
77.65			10.5						10.5	10.5	10.5									42.0
83.43	2.9																			2.9
85.60		7.1																		7.1
87.45	8.1																			8.1
90.37		4.2																		4.2
90.45		3.2																		3.2
90.55									3.5											3.5
90.60			6.5					6.5												13.0
93.35			3.3								3.3									6.6
93.40		36.2	18.1																	54.3
93.45	14.6																			14.6
93.50	8.5	4.3																		12.8
97.45	4.9	9.9																2.5		17.3
100.45				3.4	3.4															6.8
100.50			2.9																	2.9
100.60		2.9	8.8																	11.7
103.30			3.3																	3.3
103.35			5.6																	5.6

Table V (cont'd)
Record of the Larvae of Jack Mackerel (Trachurus symmetricus), 1954

Station	Midpoint of Size Class (in mm.)																	
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5407 (cont'd):																				
103.40			3.4					3.4	3.4											10.2
107.35		3.2																		3.2
107.40		3.3																		3.3
110.40			2.7																	2.7
110.60				3.1																3.1
113.40		6.0																		6.0
133.25				5.6																5.6
Total	39.0	90.6	68.1	12.1	16.7	3.0		15.5	20.4	15.7	13.8	2.3			2.2			2.5		301.9
Cruise 5408:																				
60.80									2.8											2.8
70.80									2.6											2.6
83.40					1.9															1.9
83.48		2.6	2.6			2.6	2.6													10.4
83.51		4.6	4.6			2.3	2.3	2.3												16.1
85.39			2.7																	2.7
85.40									1.6											1.6
85.45						2.4														2.4
85.50		2.4	2.4																	4.8
85.55						2.6														2.6
85.60				3.2			3.2	3.2												9.6
87.55					2.6															2.6
90.30											2.2									2.2
90.37	2.8																			2.8
93.35						2.7														2.7
97.30													3.2							3.2
97.40			2.8	2.8			2.8													8.4
97.45		3.1																		3.1
97.50			2.5																	2.5
100.40					2.9												2.9			5.8
100.45				3.0	3.0													3.0		9.0
100.50				2.7				2.7												5.4
100.60		5.8																		5.8
Total	2.8	18.5	17.6	11.7	10.4	12.6	10.9	8.2	7.0		2.2		3.2				2.9	3.0		111.0
Cruise 5410:																				
93.55		6.4	16.1																	22.5
123.50				9.7																9.7
Total		6.4	16.1	9.7																32.2
Cruise 5412:																				0

Table VI
Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1954

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5401:																				
123.37		7.0	7.0	2.4																16.4
130.35			11.1																	11.1
133.25		5.0	2.5																	7.5
137.23						2.8														2.8
137.30	5.9	50.5	5.9																	62.3
140.30							2.9													2.9
143.26		10.8		10.8								10.8								32.4
143.35								2.9												2.9
147.20		5.6	14.0	36.4	25.2	5.6		2.8			2.8									92.4
147.25			6.2	80.1	184.8	178.6	6.2		6.2											462.1
147.30			18.7	46.8	6.2	18.7	15.6	6.2	18.7	15.6			3.1							149.6
150.19	2.8	42.6	113.6	90.9	31.2	39.8	19.9	17.0	2.8											360.6
150.30			3.1	6.2	6.2															15.5
Total	8.7	121.5	182.1	273.6	253.6	245.5	44.6	28.9	27.7	15.6	2.8	10.8	3.1							1218.5
Cruise 5402:																				
133.25												4.5								4.5
137.23						2.0		2.0												4.0
137.30								8.2	2.7			2.7								13.6
Total						2.0		10.2	2.7			7.2								22.1
Cruise 5403:																				
110.35		2.7																		2.7
123.40	2.8	2.8																		5.6
130.35	10.2	10.2																		20.4
130.40	2.8	2.8	11.4																	17.0
130.45												2.5								2.5
133.30									2.3											2.3
137.23					2.2			2.2	9.0	4.5	2.2									20.1
137.30	5.5	24.9	8.3		13.8	27.7			2.8											83.0
Total	21.3	43.4	19.7		16.0	27.7		2.2	14.1	4.5	2.2	2.5								153.6

Table VI (cont'd)
Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1954

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5404:																				
110.55										3.0										3.0
110.80						3.2														3.2
117.37		22.2	11.1																	33.3
117.40		3.7																		3.7
117.47											2.9									2.9
120.45	3.9																			3.9
120.60	3.3		3.3																	6.6
123.40									7.4											7.4
127.42	4.2																			4.2
127.45	3.4	3.4																		6.8
130.50			3.1																	3.1
133.25								5.6												5.6
Total	14.8	29.3	17.5			3.2		5.6	7.4	3.0	2.9									83.7
Cruise 5405:																				
93.70		2.0																		2.0
97.45				2.6	2.6															5.2
107.80				4.0																4.0
110.55		3.4						3.4												6.8
110.80					3.5															3.5
113.37						2.7														2.7
117.37		3.2																		3.2
117.47		2.4	2.4																	4.8
120.27		2.9																		2.9
120.32	2.5	2.5	2.5																	7.5
120.35		2.4																		2.4
120.37		2.0																		2.0
120.55		3.0	3.0																	6.0
120.60	2.7	5.5	5.5																	13.7
120.80		3.5																		3.5
123.42													3.2							3.2
123.55		3.2																		3.2
123.60		2.9	2.9																	5.8
127.37			2.9																	2.9
127.50			3.2																	3.2
Total	5.2	38.9	22.4	6.6	6.1	2.7		3.4					3.2							88.5

Table VI (cont'd)
Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1954

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5406:																				
83.40	2.1																			2.1
83.60							13.7													13.7
90.60			3.4																	3.4
90.80			3.4																	3.4
93.27	12.7		6.3																	19.0
97.40				2.8																2.8
100.30			2.7				2.7													5.4
100.40			3.1																	3.1
100.45							3.0													3.0
100.60				2.5																2.5
107.32		2.9																		2.9
107.45		3.1	3.1																	6.2
107.60			2.4																	2.4
110.45			12.2																	12.2
110.50		3.0	3.0																	6.0
113.42	11.2	45.0	28.1	2.8																87.1
113.45	7.7	74.2	30.7	2.6	2.6															117.8
113.47	7.7	66.8	28.3																	102.8
113.50		2.7	2.7	2.7																8.1
113.55						3.1														3.1
117.32			2.9																	2.9
117.37																			2.7	2.7
117.55		25.4	19.1																	44.5
120.60			4.9			2.4														7.3
127.37			4.8																	4.8
133.30		2.7																		2.7
137.23		1.8																		1.8
Total	41.4	227.6	161.1	13.4	2.6	5.5	19.4												2.7	473.7
Cruise 5407:																				
80.51					2.0															2.0
83.40	12.7																			12.7
83.43				2.9																2.9
83.48				2.4																2.4
83.51	1.9		5.7		1.9		1.9													11.4
85.40		2.6																		2.6
85.45			2.5																	2.5

Table VI (cont'd)
Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1954

Station	Midpoint of Size Class (in mm.)																	
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5407 (cont'd):																				
87.35			4.5																	4.5
87.40		8.7																		8.7
90.37	12.5	25.0	4.2																	41.7
100.30		2.4																		2.4
100.45		3.4																		3.4
103.30		3.3	6.7																	10.0
107.32			3.5																	3.5
110.33	3.7	7.4																		11.1
110.35	2.9																			2.9
123.37			2.6																	2.6
127.34								2.2												2.2
127.50	2.9	2.9																		5.8
130.50		3.1	3.1		3.1		3.1													12.4
130.60			6.5	6.5	6.5															19.5
Total	36.6	58.8	39.3	11.8	13.5		5.0	2.2												167.2
Cruise 5408:																				
107.40									3.6											3.6
117.40		2.9																		2.9
120.30		7.4				2.5	2.5													12.4
120.35			2.6	2.6	7.8															13.0
120.45			36.6	7.3																43.9
123.37				2.7			2.7													5.4
123.40						10.0	3.3													13.3
123.45		9.1	21.2																	30.3
127.40						2.8	2.8													5.6
127.45						5.9														5.9
127.50		2.8			5.6			2.8												11.2
130.30						6.0														6.0
130.45								3.4	3.4	3.4										10.2
133.25				2.6	5.2	23.5	10.4	2.6	2.6											46.9
133.40					4.3															4.3
Total		22.2	60.4	15.2	22.9	50.7	21.7	8.8	9.6	3.4										214.9

Table VI (cont'd)
Record of the Larvae of Pacific Mackerel (Pneumatophorus diego), 1954

Station	Midpoint of Size Class (in mm.)																		
	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.75	6.75	7.75	8.75	9.75	10.75	11.75	12.75	13.75	14.75	15.26 & over	Dis.	Total
Cruise 5410:																				
117.26			2.6																	2.6
120.25							1.2	1.2												2.4
120.30					5.1	7.7	2.6	5.1												20.5
120.50								7.9		3.9										11.8
120.60									3.7											3.7
123.45								2.9												2.9
137.23					2.0	2.0	2.0	2.0												8.0
137.30				2.9			2.9													5.8
Total			2.6	2.9	7.1	9.7	8.7	19.1	3.7	3.9										57.7
Cruise 5412:																				
137.23	9.2																			9.2
147.20	74.5		2.1																	76.6
Total	83.7		2.1																	85.8

Table VII
Record of the Larvae of Hake (Merluccius productus), 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
50.47	-	-	-	-	-		-	-	-	-
50.50	-	-	-	-	-		-	-	-	-
50.60	-	-	-	-	-		-	-	-	-
50.70	-	-	-	-	-		-	-	-	-
50.80	-	-	-	-	-		-	-	-	-
50.90	-	-	-	-	-		-	-	-	-
50.100	-	-	-	-	-		-	-	-	-
53.52	-	-	-	-	-		-	-	-	-
53.55	-	-	-	-	-		-	-	-	-
53.65	-	-	-	-	-		-	-	-	-
57.51	-	-	-	-	-		-	-	-	-
57.55	-	-	-	-	-		-	-	-	-
57.65	-	-	-	-	-		-	-	-	-
60.55	-	-	-						-	-
60.60	-	-	-						-	-
60.70	-	-	-						-	-
60.80	-	-	-						-	-
60.90	-	-	-						-	-
60.100	-	-	-	-	-				-	-
63.52	-	-	-						-	-
63.55	-	-	-						-	-
63.65	-	-	-	-	-		-	-	-	-
67.50	-	-	-						-	-
67.55	-	-	-						-	-
67.65	-	-	-	-	-				-	-
70.51	-	-	-	N.S.					-	-
70.55	-	-	-	2	5	11			-	-
70.60	-	-	-						-	-
70.70	-	-	-			3			-	-
70.80	-	-	-	N.S.					-	-
70.90	-	-	-		19		-	-	-	-
70.100	-	-	-	-	-		-	-	-	-
73.50	-	-	-				N.Q.		-	-
73.55	-	-	-	-	-	-	-		-	-
73.60	-	-	-			15	N.Q.		-	-
77.50					N.Q.					-
77.55						2				-
77.65	-	-	-			N.Q.			-	-
80.51										21
80.55	4									
80.60	3	3								
80.70						N.Q.				
80.80				2	5					

Table VII (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1954

Station	Cruise and Month									
	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
80.90		-		8	12					
80.100		-	-	-	-		-		-	-
80.110		-	-	-	-	-	-	-	-	-
82.47										16
83.40	40	9	3					2		
83.43	3	3		4						16
83.48	2		3							4
83.51			10							3
83.55					11					
83.60										
83.70	-	-	-				-	-	-	-
83.80	-	-	-	20	8	5	-	-	-	-
83.90	-	-	-	18	17	8	-	-	-	-
85.39	N.S.	18	14		2		N.Q.	3		17
85.40	6	16	15	4		-			3	12
85.45	5	7	2	3	6					3
85.50	3	3	60	48						
85.55				28						
85.60	2	10	241	10	12	25				
87.35		3	40					3		14
87.40	3	17	5						N.Q.	9
87.45	2	10	14	6						
87.50		14		2	2					
87.55	9			90						
87.60			4,157	63	30	19				
87.70	-	-	-	142	6	-	-	-	-	-
87.80	-	-	-	208	14	2	-	-	-	-
87.90	-	-	-	26	6		-	-	-	-
90.28	6	5								
90.30	4	11	6	16						3
90.33	-	-	-	-			-	-	-	-
90.37	10	2		3						3
90.41	-	-	-	-			-	-	-	-
90.45	4	6		5	10					
90.50	-	-	-	-	2		-	-		3
90.55	17			11		3				-
90.60				26		3				3
90.70				8						
90.80			-	20	28	3	-	-	-	-
90.90		-	-	31	19	-	-	-	-	-
90.100		-	-	-	-	-	-	-	-	-
90.110		-	-	-	-	-	-	-	-	-

Table VII (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1954

Station	Cruise and Month									
	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
93.27	3	14	25							3
93.30	7	3								
93.35	-	-	-	14			3		-	-
93.40	13		3			N.Q.			6	
93.45	-	-	-	9		2			11	-
93.50	56		-	3	3		4			
93.55	-	-	-	8	32		-	-		-
93.60		2	-		3		-	-	-	-
93.70	-	-				3	-	-	-	-
93.80	-	-	-	6	21	-	-	-	-	-
93.90	-	-	-	70	11	N.Q.	-	-	-	-
97.30			8							
97.32	3	5		N.S.	2					3
97.35	-	-	-	-	8		-	-	-	-
97.40				58	11					
97.45	-	-	-	38	29					-
97.50	2	3	61	137	11					4
97.55	-	-	-	6	5		-	-		-
97.60			256	3	4		-	-	-	-
97.70	-	-	1,988	63	3		-	-	-	-
97.80	-	-	-	102	3		-	-	-	-
97.90	-	-	-	254	22	3	-	-	-	-
100.29	5	76								12
100.30	9	32	12							3
100.35	-	-	3		5				-	-
100.40	194	5	14		6					
100.45	-	-	1,225	136	41					-
100.50	6		1,030	60	16					N.Q.
100.55	-	-	380	57	19		-	-		-
100.60	2	16	50	144	5					
100.70		306	18	75						
100.80		144	59	19	3			-		N.Q.
100.90		-	7	18			-	-		
100.100	-	-	-			-	-	-	-	-
103.30	59	180	5							6
103.35	43		7		2					
103.40	2		34	85	6					
103.45	-		74	358	15	3	-	-	-	-
103.50			228	55	24	3	-	-	-	-
103.55	-	-	1,832	120	3		-	-	-	-
103.60	2	3	74	135	3		-	-	-	-
103.70	-	-	-	15	3		-	-	-	-
103.80	-	-	-	48			-	-	-	-
103.90	-	-	-	N.Q.		-	-	-	-	-

Table VII (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
107.32	16	106	2	19	6					3
107.35	6		2	51	14					
107.40		7	20	22	18					
107.45	-		77	110	3		-	-	-	-
107.50	N.S.	970	44	29	3		-	-	-	-
107.55	-	-	25	24	26		-	-	-	-
107.60		19	14	53			-	-	-	-
107.70	-	-	-	14			-	-	-	-
107.80	-	-	-	3		-	-	-	-	-
110.33	6	269	9	16	6					46
110.35	2	134	14	10	18					6
110.40		8	18	6	24					
110.45	-	65	24	9	4					-
110.50		260	80	3						
110.55	-	-	88	3	3		-	-		-
110.60		2,421	7	10						
110.70	2	-	186				-	-	-	-
110.80		-	30	32			-	-	-	-
110.90		-	-	3		-	-	-	-	-
110.100		-	-	-	-	-	-	-	-	-
113.30	3	56	5	4						9
113.32	-	-		8			-	-	-	-
113.35	166	388	13	11		3				
113.37	-	-	58	30			-	-	-	-
113.40	20	113		17						
113.42	-	-		14			-	-	-	-
113.45	-	43	111	9			-	-	-	-
113.47	-	-	414	6			-	-	-	-
113.50		7	53				-	-	-	7
113.55	-	-	37				-	-	-	-
113.60	-	72	69				-	-	-	
113.70	-	-	-	4			-	-	-	-
117.26	22	N.S.		6	5	11	2	2		
117.28	-	-	3				-	-	-	-
117.30	9	349	286	8	2					28
117.32	-	-	25	25	11		-	-	-	-
117.35	255	156	88	39	27					36
117.37	-	-	47	39	3		-	-	-	-
117.40	3	6	27	11	4			3	4	22
117.42	-	-	2	39	4		-	-	-	-
117.45	-	3		76			-	-	-	-
117.47	-	-		54	2		-	-	-	-
117.50		38	7	25	2		-	-	-	

Table VII (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1954

Station	Cruise and Month									
	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
117.55	-		71				-	-	-	-
117.60	-		53				-	-	-	
117.70	-	-	-				-	-	-	-
120.25	5			10					1	
120.27	-	-	N.Q.	7	6		-	-	-	-
120.30		12	20	22	4			7		
120.32	-	-	3	35			-	-	-	-
120.35		2		6						
120.37	-						-	-	-	-
120.40	-	2		5			-	-	-	
120.42	-	175	36	123			-	-	-	-
120.45	78	94	161	97	6			4		
120.47	-	-	131	107	3		-	-	-	-
120.50	45	34	54	112	12					
120.55	-	545	23	36			-	-	N.Q.	-
120.60		145	11							
120.70		27			3					
120.80		6		-	4					
120.90	-	-	5	-	4					
123.37	26	28	62	42						
123.40	6	19	142	37	24					
123.42	-	34		132	6		-	-	-	-
123.45	-	33	5	145	11					
123.47	-	-	8	66	3		-	-	-	-
123.50			9	43	19					
123.55	-	-	18	4	10		-	-		
123.60		-	21		66		-	-	-	-
127.34	6	166	54	96	3		2		N.Q.	
127.37	-	-	26	92			-	-	-	-
127.40	15	14	32	63	9	N.Q.				
127.42	-	-	5	286	12		-	-	-	-
127.45	-		12	14	3					
127.47	-	-	12				-	-	-	-
127.50	10	2		11						
127.55	-	-	6				-	-		
127.60		-		10			-	-	-	-
130.30	21	279	6	45						
130.35	1,374	1,480	1,930	53						
130.40	24		136	28	3					
130.45	-		20	3						-
130.50			5	9						
130.55	-						-	-		-
130.60	7				3					

Table VII (cont'd)
Record of the Larvae of Hake (Merluccius productus), 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
133.25	30	72	32	134						
133.30	328	43	256	287						
133.35	-	25	110	24					-	-
133.40	18								-	-
133.45	-	-	9		13		-	-	-	-
133.50		-	35		9		-	-	-	-
133.60	-	-	-			-	-	-	-	-
137.23			4	48						
137.30	333	699	155	42			6			
137.35	-	-	60	71			-	-	-	-
137.40	12	-	3	7			-	-	-	-
137.45	-	-	3	3			-	-	-	-
137.50	8	-		3			-	-	-	-
137.60	-	-	-			-	-	-	-	-
140.30	67	-	-	-	-	-	-	-	-	
140.35	115	-	-	-	-	-	-	-	-	
140.40	3	-	-	-	-	-	-	-	-	9
140.50		-	-	-	-	-	-	-	-	-
140.110	3	-	-	-	-	-	-	-	-	-
143.26	3,154	-	-	-	-	-	-	-	-	
143.30	1,088	-	-	-	-	-	-	-	-	
143.35	202	-	-	-	-	-	-	-	-	
147.20	608	-	-	-	-	-	-	-	-	
147.25	11,002	-	-	-	-	-	-	-	-	
147.30	1,070	-	-	-	-	-	-	-	-	
150.19	14	-	-	-	-	-	-	-	-	
150.25		-	-	-	-	-	-	-	-	
150.30	53	-	-	-	-	-	-	-	-	
153.16	-	-	-	-	-	-	-	-	-	
153.20	-	-	-	-	-	-	-	-	-	
153.30	-	-	-	-	-	-	-	-	-	
157.10	-	-	-	-	-	-	-	-	-	
157.20	-	-	-	-	-	-	-	-	-	
157.30	-	-	-	-	-	-	-	-	-	
Total	20,764	10,352	17,592	6,100	954	127	17	24	25	324

Table VIII
Record of the Larvae of Rockfish (Sebastodes spp.), 1954

Station	Cruise and Month									
	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
50.47	-	-	-	-	-	5	-	-	-	-
50.50	-	-	-	-	-		-	-	-	-
50.60	-	-	-	-	-		-	-	-	-
50.70	-	-	-	-	-		-	-	-	-
50.80	-	-	-	-	-	82	-	-	-	-
50.90	-	-	-	-	-	18	-	-	-	-
50.100	-	-	-	-	-	5	-	-	-	-
53.52	-	-	-	-	-	38	-	-	-	-
53.55	-	-	-	-	-	50	-	-	-	-
53.65	-	-	-	-	-	13	-	-	-	-
57.51	-	-	-	-	-	4	-	-	-	-
57.55	-	-	-	-	-		-	-	-	-
57.65	-	-	-	-	-	6	-	-	-	-
60.55	-	-	-	64	23		5	57	-	-
60.60	-	-	-	7	3	38	11	16	-	-
60.70	-	-	-	7		21	10	12	-	-
60.80	-	-	-			10	18		-	-
60.90	-	-	-	16		12	16	3	-	-
60.100	-	-	-	-	-		9	4	-	-
63.52	-	-	-	6	31	13			-	-
63.55	-	-	-	5	177	478	75	39	-	-
63.65	-	-	-	-	-		-	-	-	-
67.50	-	-	-		27	257		10	-	-
67.55	-	-	-	52	6	96	68	10	-	-
67.65	-	-	-	-	-		64	10	-	-
70.51	-	-	-	N.S.	18	90			-	-
70.55	-	-	-	122	10	23	29		-	-
70.60	-	-	-	6		5		12	-	-
70.70	-	-	-	4	4	6			-	-
70.80	-	-	-	N.S.		9			-	-
70.90	-	-	-	9	3		-	-	-	-
70.100	-	-	-	-	-	2	-	-	-	-
73.50	-	-	-	28	33	55	N.Q.	12	-	-
73.55	-	-	-	-	-	-	-	56	-	-
73.60	-	-	-	6	12	9	N.Q.	61	-	-
77.50	426	271	34	311	N.Q.		86	12		-
77.55	419	486	63	111	6	2	82	24		-
77.65	-	-	-	13	12	N.Q.	21	3	-	-
80.51	92	374	35		12	4	20	11		3
80.55	41	979	6	2	14		7	67		124
80.60	9	333	63	61			64	18	3	13
80.70		14	5	3	4	N.Q.	25			
80.80			18	2	3		10			

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
80.90		-	15	2	2					
80.100		-	-	-	-		-		-	-
80.110		-	-	-	-	-	-	-	-	-
82.47	14	178	475	120	41		28		12	162
83.40		397	154	5	15		6			
83.43	146	344	358	170			23	3	20	24
83.48	325	255	812	148	72	4	36	16	29	50
83.51	444	331	456	37	24	3	17	14	10	25
83.55	392	32	100	163	34		37	7	3	
83.60	138			41	34	96	25	6		
83.70	-	-	-	12		21	-	-	-	-
83.80	-	-	-	3	2	5	-	-	-	-
83.90	-	-	-	7			-	-	-	-
85.39	N.S.	1,848	752	137	10	30	N.Q.	35	12	3
85.40	125	342	241	472	40	-	38		3	47
85.45	204	1,121	234	55	65	2	18	5	12	15
85.50	356	548	448	10	71		6	7	11	16
85.55	5	734	32	3	44			5	15	
85.60	13	77			104	99	29	3		
87.35	189	218	322	20	56	15		26	15	20
87.40	278	64	73	48	67			3	N.Q.	38
87.45	514	589	163	70	51	29	8	5	6	68
87.50	164	1,920	210	4	58		10	38	11	178
87.55	31		210	31	35	53	14		5	3
87.60	14	8		35		58	13	7		
87.70	-	-	-	5	6	-	-	-	-	-
87.80	-	-	-	3		2	-	-	-	-
87.90	-	-	-				-	-	-	-
90.28	41	100	102	56	2	6	5		8	28
90.30	437	76	95	74	19	15	25	4	12	41
90.33	-	-	-	-	42	6	-	-	-	-
90.37	46	575	6	68	32	6		20	14	
90.41	-	-	-	-	58	9	-	-	-	-
90.45	34	12	106	179	172	7			6	
90.50	-	-	-	-	82	5	-	-	38	17
90.55	133	101	59	119	26	17	4		6	-
90.60	183	48	34	7	109	34	39			26
90.70				8		19				
90.80	3	3	-	6		3	-	-	-	-
90.90		-	-			-	-	-	-	-
90.100		-	-	-	-	-	-	-	-	-
90.110		-	-	-	-	-	-	-	-	-

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
93.27	54	41	193	20	71	6	357	23	3	9
93.30	26	8	6	18	7	10	10		3	3
93.35	-	-	-	171	24	9	7	3	-	-
93.40	26	5	78	26	15	N.Q.			12	10
93.45	-	-	-	174	11	15			3	-
93.50	8		-	15	72	9	17			3
93.55	-	-	-	8	24	130	-	-		-
93.60	49		-	10	5	60	-	-	-	-
93.70	-	-			22	18	-	-	-	-
93.80	-	-	-			-	-	-	-	-
93.90	-	-	-			N.Q.	-	-	-	-
97.30	34	99	155	110	18	5	170		25	14
97.32	31	88	223	N.S.	5	8				
97.35	-	-	-	-	10	7	-	-	-	-
97.40	6	39	18	20	8	6				6
97.45	-	-	-	9	3	44	12			-
97.50		11	6	3	3	3				
97.55	-	-	-	3	3		-	-		-
97.60						5	-	-	-	-
97.70	-	-	7	6	6		-	-	-	-
97.80	-	-	-		6	3	-	-	-	-
97.90	-	-	-				-	-	-	-
100.29	212	208	20	58	26	6		3	13	21
100.30	223	119	77	497	41	5		6	25	15
100.35	-	-	58	265	10				-	-
100.40	154		7	45	9	6	6			
100.45	-	-		14	14		3			-
100.50	6	15								N.Q.
100.55	-	-			19		-	-		-
100.60			5		11	2				
100.70		6								
100.80		5						-		N.Q.
100.90		-					-	-		
100.100	-	-	-			-	-	-	-	-
103.30	59	227	119	125	28	40		13	17	9
103.35	17		2	105	55	18			9	31
103.40			3	6	30	14		3	3	
103.45	-				10	9	-	-	-	-
103.50		3					-	-	-	-
103.55	-	-			3		-	-	-	-
103.60				3			-	-	-	-
103.70	-	-	-				-	-	-	-
103.80	-	-	-				-	-	-	-
103.90	-	-	-			-	-	-	-	-

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
107.32	57	176	295	151	77		4	12		9
107.35	6		40	15	36	6				7
107.40					8	12		4	3	
107.45	-			20	3		-	-	-	-
107.50	N.S.			4			-	-	-	-
107.55	-	-					-	-	-	-
107.60							-	-	-	-
107.70	-	-	-				-	-	-	-
107.80	-	-	-			-	-	-	-	-
110.33	211	180	22	129	16	9	7		16	17
110.35		121	38	105		19	6		3	36
110.40			2	9	12	3				
110.45	-			17	45					-
110.50	7		6	9	9	3			6	
110.55	-	-					-	-		-
110.60	2	3				6				
110.70	9	-	11				-	-	-	-
110.80		-	5				-	-	-	-
110.90		-	-			-	-	-	-	-
110.100		-	-	-	-	-	-	-	-	-
113.30	27	287	132	40	3	7	2			21
113.32	-	-	80	126	24	132	-	-	-	-
113.35	98	115	16	14	53	3				5
113.37	-	-	13		3	46	-	-	-	-
113.40		6				3			3	
113.42	-	-					-	-	-	-
113.45	-			3			-	-	-	-
113.47	-	-	6	9			-	-	-	-
113.50				7			-	-	-	17
113.55	-	-					-	-	-	-
113.60	-		21				-	-	-	
113.70	-	-	-				-	-	-	-
117.26	2	N.S.	52	97	16		2			2
117.28	-	-	40	38	212	42	-	-	-	-
117.30	3	37	130	86	52	54	6			6
117.32	-	-	16	63	44		-	-	-	-
117.35	3	39	53	79	131		4	5	6	17
117.37	-	-	21	208	22	6	-	-	-	-
113.40	15	11	286	171	4	5		32		16
117.42	-	-	137	6	4	3	-	-	-	-
117.45	-	11		5		6	-	-	-	-
117.47	-	-	3	6	48	3	-	-	-	-
117.50		16	7	3	2	9	-	-	-	

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1954

Station	Cruise and Month 5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
117.55	-		33			6	-	-	-	-
117.60	-						-	-	-	9
117.70	-	-	-				-	-	-	-
120.25			3		8		14			2
120.27	-	-	N.Q.	13	75	2	-	-	-	-
120.30	11	7	24	22	67	9	19			
120.32	-	-	6	92	23	8	-	-	-	-
120.35	5	6		17	12	31				
120.37	-		2	12	18	29	-	-	-	-
120.40	-	29	5	28	2		-	-	-	6
120.42	-	37	188	165	7	2	-	-	-	-
120.45	19	12	135	160	6	3	27	7		
120.47	-	-	102	65	13		-	-	-	-
120.50	3	6	68	105	90					
120.55	-	30	23		121		-	-	N.Q.	-
120.60		2	18			5		6		5
120.70		3	15			6				
120.80				-	28			6		
120.90	-	-		-	14					
123.37	12		84	175	38	6	13	3		6
123.40	6		40	66	34	9	6	3		
123.42	-	9		145	13		-	-	-	-
123.45	-	24		152	63					3
123.47	-	-		131	39		-	-	-	-
123.50				7	38			3		
123.55	-	-		4	23		-	-		
123.60		-		3	155		-	-	-	-
127.34			167	45	41	3	4	3	N.Q.	5
127.37	-	-	85	125	9	29	-	-	-	-
127.40	6		21	149	103	N.Q.	3	23	3	
127.42	-	-	3	232	91	6	-	-	-	-
127.45	-			239			53	56	3	
127.47	-	-		16			-	-	-	-
127.50	3	2					3	6		
127.55	-	-					-	-		
127.60		-					-	-	-	-
130.30		6	4	13	4	16				
130.35				23	3	3	2			
130.40				11	5			5	5	
130.45	-			3	3		11	3		-
130.50	3						3	4	6	
130.55	-	3					-	-		-
130.60							3		4	

Table VIII (cont'd)
Record of the Larvae of Rockfish (Sebastodes spp.), 1954

Station	Cruise and Month									
	5401 Jan.	5402 Feb.	5403 Mar.	5404 Apr.	5405 May	5406 June	5407 July	5408 Aug.	5410 Oct.	5412 Dec.
133.25					2				2	
133.30		12	52	3	24	3	3			
133.35	-			6	6		7		-	-
133.40					3	5	12		-	-
133.45	-	-			26	6	-	-	-	-
133.50		-			35		-	-	-	-
133.60	-	-	-			-	-	-	-	-
137.23	11									
137.30	12	8	91							
137.35	-	-		4			-	-	-	-
137.40		-		4			-	-	-	-
137.45	-	-					-	-	-	-
137.50		-					-	-	-	-
137.60	-	-	-			-	-	-	-	-
140.30	15	-	-	-	-	-	-	-	-	
140.35		-	-	-	-	-	-	-	-	
140.40		-	-	-	-	-	-	-	-	
140.50		-	-	-	-	-	-	-	-	-
140.110	3	-	-	-	-	-	-	-	-	-
143.26		-	-	-	-	-	-	-	-	
143.30	16	-	-	-	-	-	-	-	-	
143.35	32	-	-	-	-	-	-	-	-	
147.20	76	-	-	-	-	-	-	-	-	
147.25	222	-	-	-	-	-	-	-	-	
147.30	100	-	-	-	-	-	-	-	-	
150.19	54	-	-	-	-	-	-	-	-	
150.25	7	-	-	-	-	-	-	-	-	
150.30	31	-	-	-	-	-	-	-	-	
153.16	-	-	-	-	-	-	-	-	-	
153.20	-	-	-	-	-	-	-	-	-	
153.30	-	-	-	-	-	-	-	-	-	
157.10	-	-	-	-	-	-	-	-	-	
157.20	-	-	-	-	-	-	-	-	-	
157.30	-	-	-	-	-	-	-	-	-	
Total	7,208	14,450	9,259	8,319	4,406	2,897	1,797	873	424	1,211

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